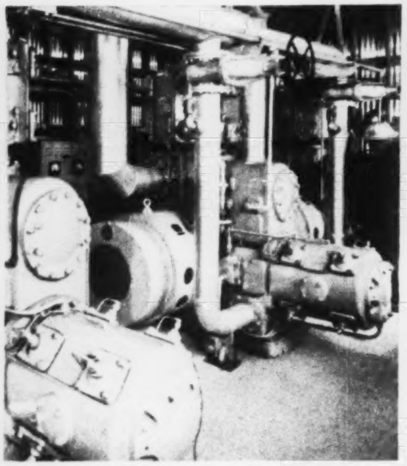
ENGINEERING NEWS-RECORD

★

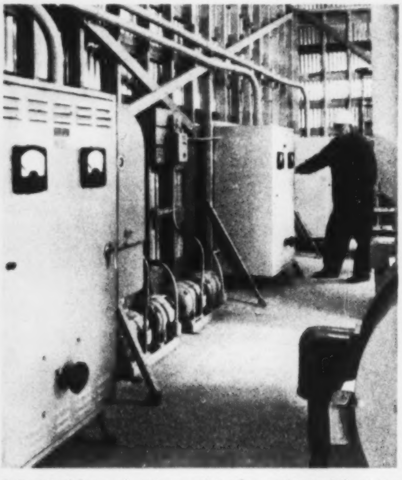
★

A McGRAW-HILL PUBLICATION

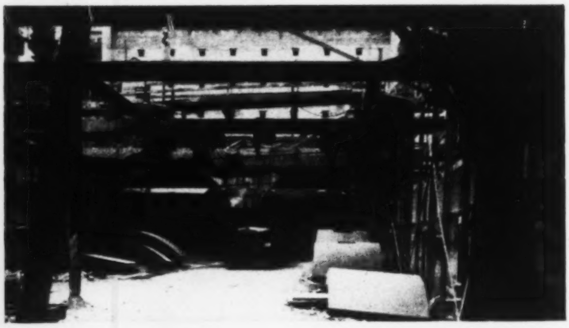
San Francisco's new twin-bore tunnel will be 3400 ft long portal-to-portal with a 1600-ft enclosed bore. Air for the construction tools and equipment is distributed from a central source under 100-lb pressure through 6-in. pipe.



A G-E 150-hp 440-volt, 600-rpm synchronous motor drives each of the three 930-cfm Ingersoll-Rand compressors. Motors and compressors run 24 hours a day, five days a week.



G-E control for each motor consists of a semi-magnetic starter providing reduced-voltage starting and complete motor protection. G-E motor-generator sets supplying field current are controlled by G-E magnetic starters mounted above them.



AIR for BOTH
TUNNELER AND TRAVELER
... *Electrically*

G-E motors and control drive compressors for construction equipment and permanent ventilating blowers at San Francisco's Broadway Tunnel

Compressed air to operate the more than 100 tools, hoists, and muckers being used by the Morrison-Knudsen Construction Co. in work on San Francisco's Broadway tunnel is supplied by centrally located compressors driven by G-E motors and control. Used in place of numerous individual units, the central air supply cuts maintenance costs and adds flexibility to the tunneling operation.

Expressing complete satisfaction with the system, Assistant Project Manager Harry Kirmond reports outstanding performance from G-E drives: *no unscheduled downtime has been charged to the drives up to the half-way mark in the two-year project.* And when the tunnel is complete, G-E equipment will still be on the job in the form of ventilating-equipment drives, and complete distribution facilities for lighting.

This is another excellent example of the flexibility, speed, and economy that G-E electrification can give you on construction jobs. *General Electric Company, Schenectady 5, N. Y.*

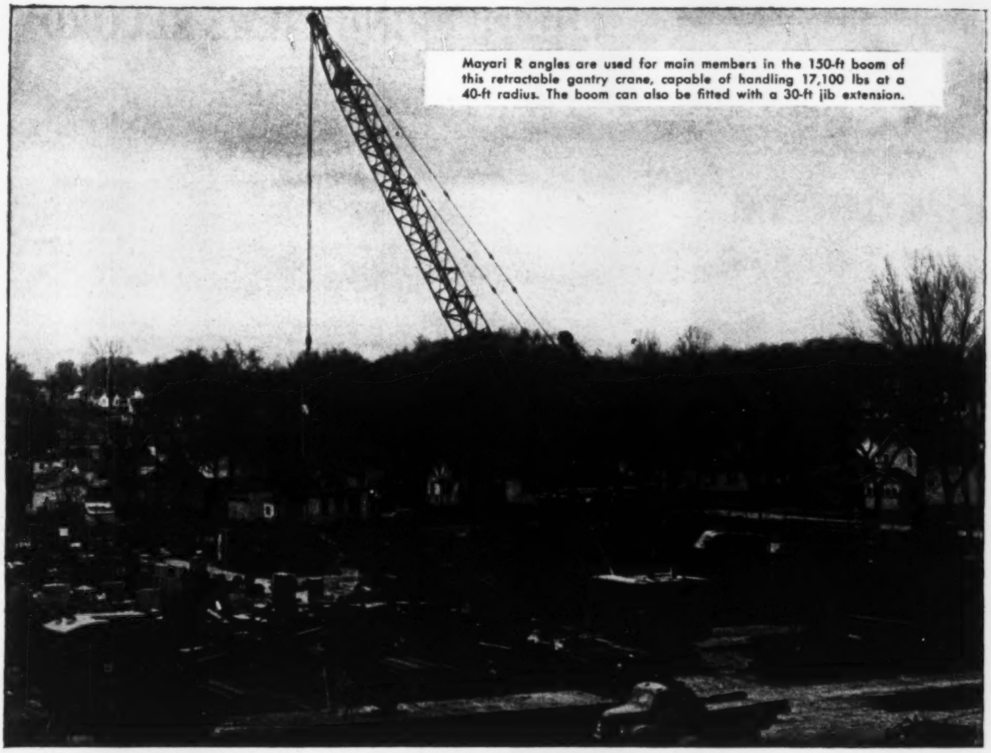
Ask him Today!

Whether you buy or build construction equipment, your G-E representative can show you how to do a better job—at lower cost—by complete electrification. Write him now, and he'll call on you at your convenience.

ELECTRIFIED EQUIPMENT
Speeds Construction—Cuts Costs

GENERAL ELECTRIC

664-18



Mayari R angles are used for main members in the 150-ft boom of this retractable gantry crane, capable of handling 17,100 lbs at a 40-ft radius. The boom can also be fitted with a 30-ft jib extension.

Boom made of MAYARI R 30 ft longer and 2000 lbs lighter

Problem: In redesigning the boom on their model K-580 retractable gantry crane, the Link-Belt Speeder Corporation had two objectives in mind: (1) The boom had to be increased from 120 ft to 150 ft in length. (2) The deadweight of the new boom had to be reduced by 2000 lbs, in spite of its greater length.

Solution: After they studied the mechanical properties of various grades of steel the engineers concluded that Bethlehem's Mayari R would do the job at low cost. The main longitudinal members were made of Mayari R angles of thinner gage than ordinarily used with structural-grade carbon steel. This reduced the deadweight and at the same time provided the extra strength needed for the longer structure. Because of the reduction in weight made possible with Mayari R, the crane has a lifting capacity 1000 lbs greater than with the previous booms.

If you are building construction equipment of any type, it will pay you to look into the advantages of low-alloy, high-strength Mayari R. It goes farther than ordinary steel, and it allows worthwhile improvements in design. Write for a copy of Mayari R catalog 259.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. ***Export Distributor:*** **Bethlehem Steel Export Corporation**

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Mayari R *makes it lighter... stronger... longer lasting*

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WILD NI
The Contractors Level

Have you the latest, time-saving machinery, and an antiquated, time-wasting Level? THEN make ALL YOUR TIME COUNT WITH THE WILD NI, THE "CONTRACTOR'S BABY."

- Split End (coincidence) Reading of Tubular Level Bubble, centering 10 times more accurate than old fashioned "Open" Level.
- 3 Leveling Screws: EASIER, FASTER to operate. Will never jam or cause stresses in the instrument.
- "Bulls Eye" Level for rough leveling.
- Available with horizontal circle for easy, accurate Laying-out of Angles.

These, plus other modern WILD refinements add up to MORE JOBS, FASTER and EASIER DONE, WITH HIGHER PRECISION.

NI without Circle.................$159.00 (*Tripod Extra*)
NI with Horizontal Circle....$201.50

Prices include Lunch Box Type Metal Carrying Case and are F.O.B. Brooklyn, N. Y.

ALL INSTRUMENTS DELIVERED FROM STOCK

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OF AMERICA, INC.
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ENGINEERING NEWS-RECORD

ABP Member ABC

Volume 147 . **OCTOBER 4, 1951** **No. 14**

WALDO G. BOWMAN
Editor

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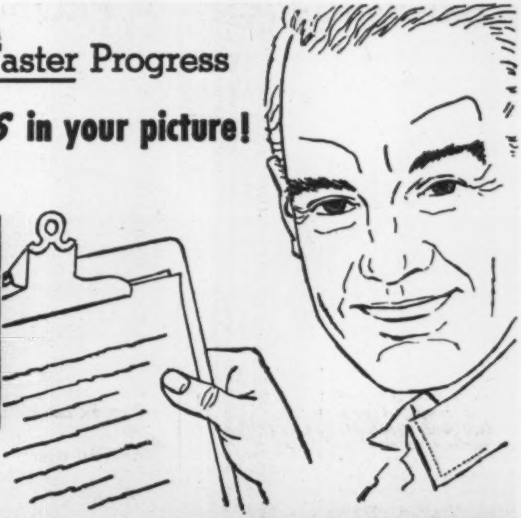
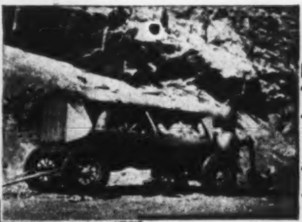
Progress Reports Reveal Faster Progress

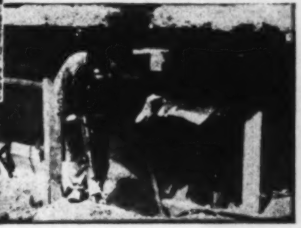
when *Gardner-Denver's* in your picture!





Air pressure's always up **—when Gardner-Denver Portables feed your lines. Cylinders are water-cooled *all* the way down for all weather efficiency—compressors are two-stage for any altitude performance.**

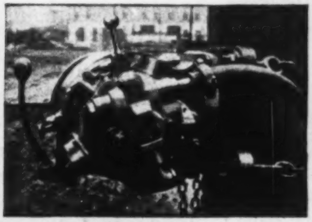
Holes are spotted quickly **—drilled fast and clean with Gardner-Denver Wagon Drills.**



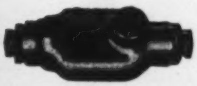
Demolition proceeds at a steady pace **—Gardner-Denver Breakers are easy on the operator—tough on concrete.**

A clean hole drills faster **— and Gardner-Denver Sinkers are noted for hole cleaning ability, powerful rotation.**

Packs backfill swiftly and firmly **—Gardner-Denver Tampers are easy to hold—seldom require maintenance—non-freezing.**



For speedy pull and haul **—powerful Gardner-Denver Air Hoists are easy to control.**



Saves shop time for all pneumatic tools **—L012 Automatic Oiler shuts off air when it runs out of oil.**

Keeps water out of your way **—Top-Suction VP4 Sump Pump won't burrow in the mud—keeps grit out of the pump shaft seal.**

Write for further information.

Clay or hardpan doesn't waste time **—when tackled with Gardner-Denver Clay Spaders and Trench Diggers.**

SINCE 1859

GARDNER-DENVER

THE QUALITY LEADER IN PUMPS, COMPRESSORS AND ROCK DRILLS

Gardner-Denver Company, Quincy, Illinois

In Canada:
Gardner-Denver Company (Canada), Ltd., Toronto, Ontario

BRIDGING A PROBLEM THE MODERN WAY

Thanks to Monotubes, there were no interrupted train schedules while foundation construction went ahead on this new overpass near Ravenna, Ohio. Owned and engineered by Ohio State Highway Department, bridge was built by Visintine & Company.

Old 2-lane bridge in foreground—a serious traffic bottleneck—replaced by the modern 4-lane bridge on Monotube foundation.

...with Monotubes

YOU'RE looking at another tough construction problem—solved by using Monotube Steel Piles.

A new 4-lane bridge was badly needed. But train traffic was heavy and foundation piles could not be driven from the railroad bed. This meant driving not only at a considerable distance from the crane, but at a much higher elevation than the actual pile cut-offs.

Because Monotubes are sturdy, *yet exceptionally light in weight,* they could easily be driven with light equipment, permitting the needed "overhang". Moreover, it was necessary to batter half the piles in two directions. Again these light, sturdy piles paid off, allowing the use of the same light driving equipment despite the added battering load.

Monotubes help make important time-and-money savings in all kinds of foundation work. They're cold rolled for high strength, offer exceptional stability and structural values, and are easily extended to any length right on the job. They come in sizes, gauges and tapers adaptable to varying soil conditions. A job *started* with Monotubes can be *completed* with them.

Get the facts about *all* the Monotube advantages. You'll see how they can reduce costs time and time again. For complete data, write The Union Metal Manufacturing Company, Canton 5, O.

UNION METAL

Monotube Foundation Piles

Proof of Long Life... Customer Satisfaction

Look at the record! Of the thousands built, 9 out of 11 Euclids are still in use today. That's proof that "Eucs" have the rugged strength and staying power to give profitable performance year after year under a wide range of operating conditions.

You can profit by the experience of Euclid owners. Over 60% of all "Eucs" sold are repeat orders! Leading contractors and industrial users buy Euclids because they are designed and built for heavy off-the-highway hauling. They're job proved for high production at the lowest cost per ton or yard moved.

Rear-Dump Euclids of 10 to 34-ton capacities have loaded top speeds up to 35.7 m.p.h., with diesel engines of 125 to 400 h.p. Bottom-Dump "Eucs" range in capacity from 13 to 25 cu. yds., have diesel engines of 190 to 300 h.p. . . . top loaded speeds up to 34.4 m.p.h.

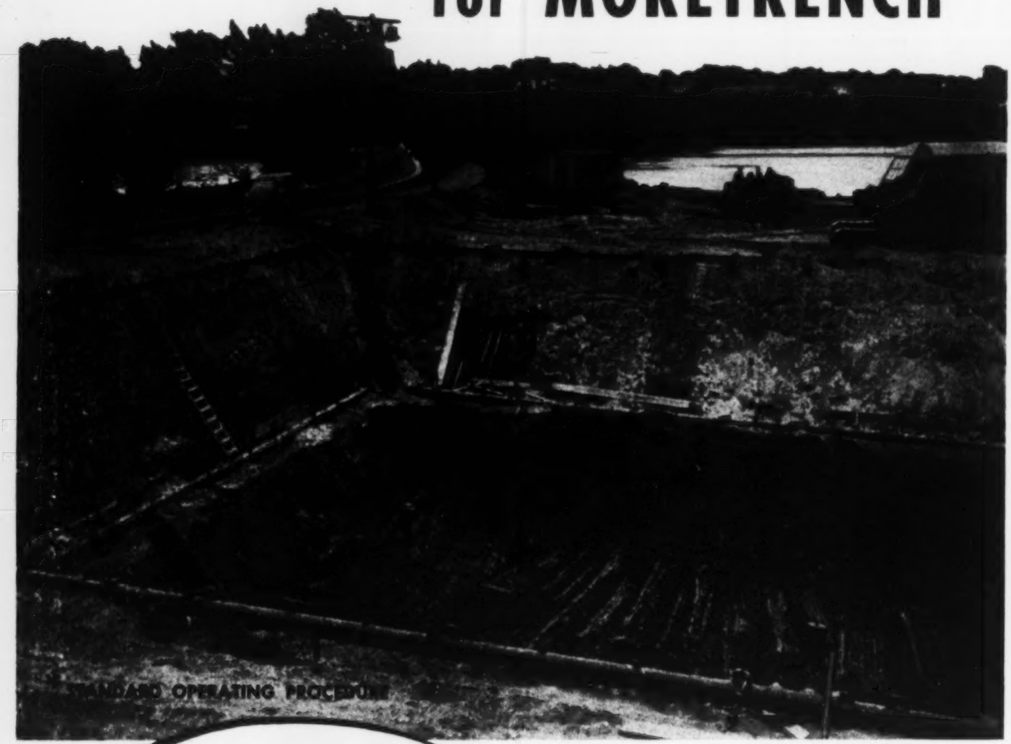
Write for information on the complete line of Euclid earth moving equipment or call your Euclid Distributor today.

The EUCLID ROAD MACHINERY Co.
Cleveland 17, Ohio

CABLE ADDRESS: YUKLID - CODE: BENTLEY

EUCLIDS

Dewatering fine soils is S. O. P.* for MORETRENCH



CONTRACTOR: *"Are you sure your wellpoints will work in such fine soil?"*

MORETRENCH: *"We guarantee it!"*

This is the Watchemoket Pumping Station in East Providence, R.I. Twenty-two feet of water in extremely fine sand and clay presented a pumping problem . . .

On May 31st pumping started at 2 P.M. On June 1st, C. L. Guild Construction Co., Inc., E. Providence, was excavating "in the dry."

The Moretrench combination of expert planning, careful installation, and superior equipment gets results every time.

To guarantee your profit on a wet job, pump with Moretrench!

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Combines Strength and Endurance with Versatility and Security

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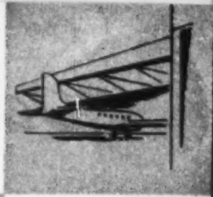
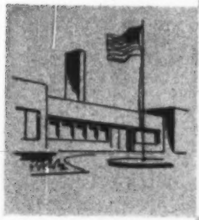

Airplane Hangars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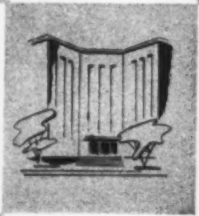
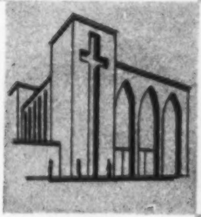
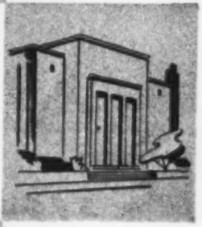
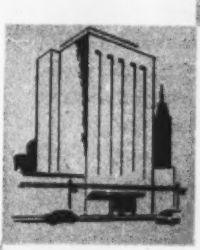
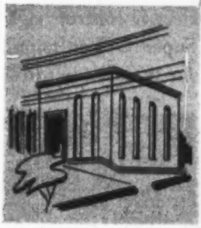

Hospitals

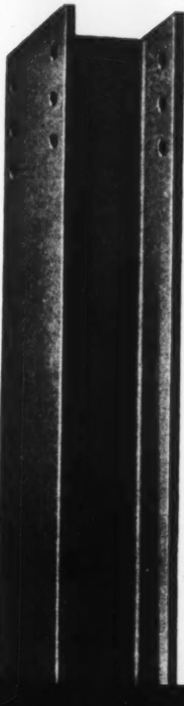

Churches


Public Buildings


Office Buildings

Fort Pitt Bridge has specialized in structural steel construction for over 55 years. Why not take advantage of this broad experience on your next structural steel project?


Industrial Plants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DETROIT, MICHIGAN . . . New Center Building

S. J. Groves speeds of Jersey Turnpike

[illegible] 160 h.p. tractor [illegible] h.p. "C" heaps 10 pay yards of [illegible] approximately 45 sec. Load distance varies from 70 to 100 ft.

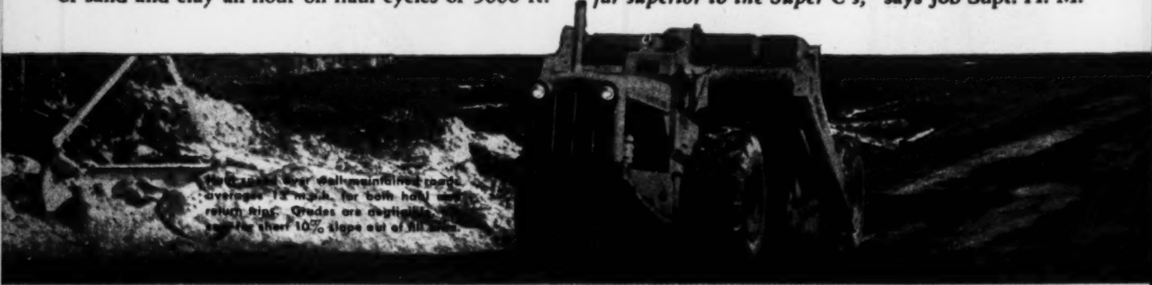
Woodbury
Deep Water

S. J. Groves & Sons Co., with state-awarded contract for 4,192,050 yards of dirtmoving on section #1 of the New Jersey Turnpike, is using a fleet of new electric-control, rubber-tired C Tournapulls with the following interesting results:

A recent time study showed that 4 of these high-speed "C's" were moving 40 loads, or 400 pay yards of sand and clay an hour on haul cycles of 5000 ft. That's an average of 10 loads per machine per hour, with an individual cycle time of 5.5 minutes.

Performance earns repeat order for 4 more C TOURNAPULLS

On the basis of consistent production like this, S. J. Groves Company has ordered 4 more new C Roadster-type Tournapulls for this job. These electric-control rigs will replace Groves' veteran Super C Tournapulls. *"The new C Roadsters are far superior to the Super C's,"* says Job Supt. H. M.



Haul speed over well-maintained roads averages 12 m.p.h. for both haul and return trips. Grades are negligible, except for short 10% slope out of fill area.

LETOURNEAU
LeT
EQUIPMENT

R. G. LeTOURNEAU, INC., Peoria, Illinois

HIGH-SPEED, RUBBER-TIRED EXCAVATING • HAULING • LIFTING EQUIPMENT

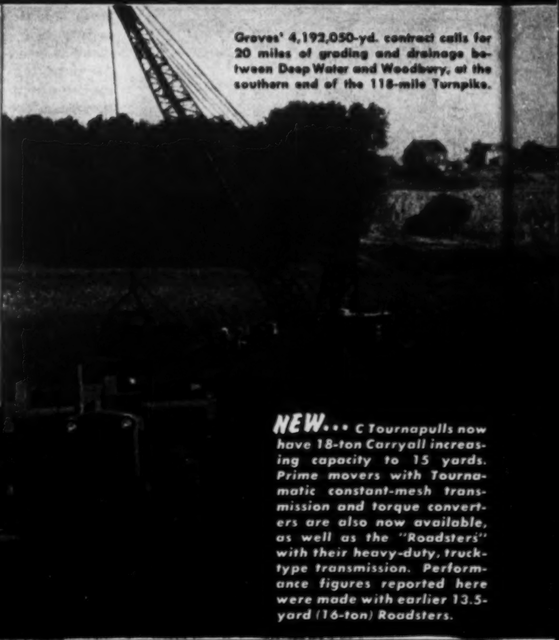
20-mile section with 4 TOURNAPULLS

Tournapull spreads 10-yd. load in 15 seconds over 30 to 60-ft. distance. Ability to turn 90° within radius of 14 ft. cuts important seconds off each cycle.

Johnson, Jr. *"In fact,"* he continues, *"the C Roadster is the best dirtmover LeTourneau has ever built."*

Get job-proved facts today

Johnson's statement is typical of those made by many other progressive contractors, who are now reporting greater production and lower-net-cost-per-yard with C Roadster Tournapulls than they have ever had before with any scraper equipment. See your LeTourneau Distributor or write today for complete job-proved facts and figures.

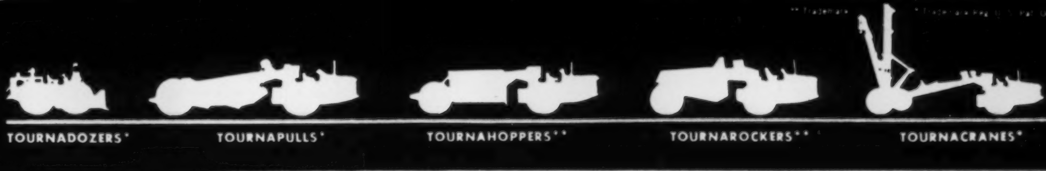


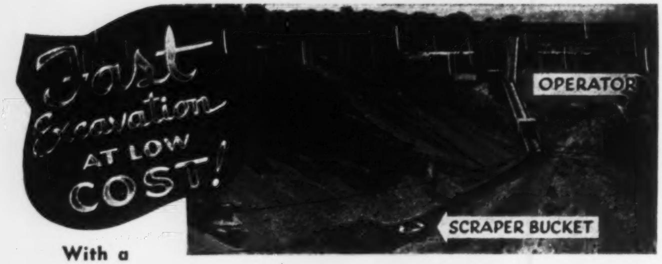
Groves' 4,192,050-yd. contract calls for 20 miles of grading and drainage between Deep Water and Woodbury, at the southern end of the 118-mile Turnpike.

NEW... C Tournapulls now have 18-ton Carryall increasing capacity to 15 yards. Prime movers with Tournamatic constant-mesh transmission and torque converters are also now available, as well as the "Roadsters" with their heavy-duty, truck-type transmission. Performance figures reported here were made with earlier 13.5-yard (16-ton) Roadsters.

Carryall, Tournapull, Tournadozer – Trademark Reg. U. S. Pat. Off. C148

** Trademark * Trademark Reg. U. S. Pat. Off.





With a

SAUERMAN SCRAPER

DRAGLINE AND SCRAPER

This picture shows a Crescent scraper rigged with a crawler dragline to convert the dragline into a slackline machine that reaches several hundred feet and moves gravel from river onto bank

SCRAPER STOCKPILING

A concrete construction project required storage of a large tonnage of aggregate on ground between railroad and mixing plant. Two Sauerman scraper machines, one of which appears in picture, stored and reclaimed 2,000 tons of material a day.

MOBILE SCRAPER UNIT

The Sauerman Tower Machine, illustrated above, uses a Crescent scraper attached to a trolley carrier which travels on a cable supported by two self-propelled towers. It can make a deep cut 1,000 ft. or more in width and move along as it digs.

In a Sauerman Power Drag Scraper you find a profitable combination of digging power, haulage speed, long reach, simple operation and economical maintenance. It cuts costs to the bone on many jobs of digging and hauling earth or bulk materials distances from 100 ft. to 1,000 ft. or more.

A Sauerman machine is particularly useful where ground conditions are difficult. It gives good results on such diverse work as the excavation of hard-packed gravel, movement of sticky clay, handling of waste material, bulk material stockpiling, removal of sludge from settling ponds and so forth. In digging from a high hill it overcomes the hazards of caving walls.

An important feature of the Sauerman machine is the Crescent scraper. Due to its streamline design, the "Crescent" requires less line-pull than any other scraper, both in digging and in conveying. It penetrates material with the ease of a plow-share, gathers a load in a few seconds, then rides its load speedily to the dumping point where it makes an instantaneous, clean dump.

The operator of a Sauerman machine has finger-tip control of the entire operation. Automatic shifting of the tail end of the machine is provided where desired. Any ordinary mechanic is readily trained as an operator. Power requirement is moderate. Installation and upkeep costs are surprisingly low.

When you have a troublesome problem involving the movement of any kind of earth or bulk material, send a description of your project to the Sauerman Engineering Dept. Their advice, based on over 40 years of experience, is yours for the asking. Write for new 24-page Scraper Catalog.

SAUERMAN BROS., Inc.
532 So. Clinton St. Chicago 7, Ill.

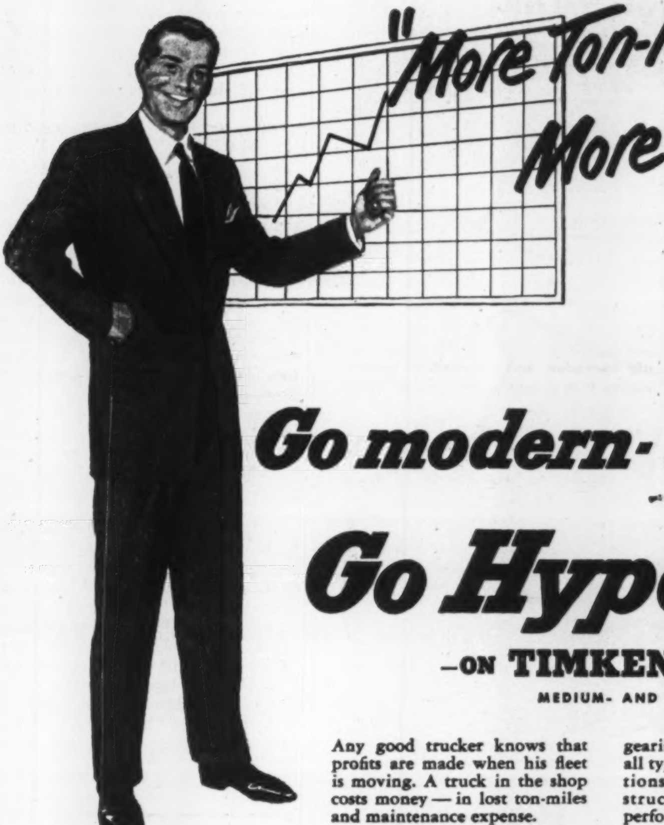
NEWS BRIEFS

• **Noblesse oblige**—Residents of Lima, Ohio, which in 1940 had a population of 44,711, have eagerly awaited the day when the population would exceed 50,000, and their community would achieve the status of a city. The first census count in 1950 gave Lima a population of 49,425, but city boosters were not discouraged. The Lima "News" and the Association of Commerce believed that a number of noses had not been counted, so they set up a downtown booth and invited anyone who thought he had been missed by census takers to register. This turned up about 900 names which were sent to Washington. The census bureau ordered a recheck which resulted in a new official figure of 50,246. However, the change in status was found to be disadvantageous in at least one respect. It will increase the city's share of the cost of the proposed relocation of U. S. Highway 25 (which runs through Lima) from $597,300 to $720,300, according to an estimate of the Ohio Highway Department, since cities share in the cost of such projects according to their size. Rank imposes obligation.

• **Old-time builders**—During restoration work on the 18th century Benjamin Waller house at Williamsburg, Va., three successive layers of roofing were revealed. The first was oak shakes, the second wood shingles, and the third slate shingles. Engineers engaged in dismantling Maine's only double-barreled, 116-year-old covered bridge at Stillwater, are finding it a rather tough proposition. The bridge was built in 1835 and its big beams were held together with wooden pegs. A frame schoolhouse which cost $500 to built in Trout Creek, N. Y., back in 1899, will be remodeled at a cost of $1,000. Frank M. Clark of Oneonta, N. Y., the contractor who built the school, recalls that he paid two carpenters $1 a day, plus board, and worked them 10 hours a day.

• **Delaware River Port Authority**—On Aug. 30 Governor John S. Fine of Pennsylvania signed the compacts between Pennsylvania and New Jersey converting the Delaware River Joint Commission into the Delaware River Port Authority. Legislation authorizes the authority to construct an additional bridge or tunnel between Philadelphia and Camden, N. J. The proposed project would supplement the present Delaware River Bridge oper-

(*Continued on page 12*)


"More Ton-Miles—
More Profit!"

Go modern-

Go Hypoid!

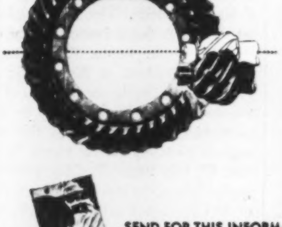
—ON TIMKEN-DETROIT

MEDIUM- AND HEAVY-DUTY AXLES

Any good trucker knows that profits are made when his fleet is moving. A truck in the shop costs money — in lost ton-miles and maintenance expense.

That's why today you'll see more and more of America's big trucks rolling on Timken-Detroit Axles with Hypoid Gearing! In both on-highway and off-highway operation, this dependable axle gearing has *proved* itself under all types of load and road conditions. Its simple, rugged construction provides maximum performance—at a minimum of maintenance expense.

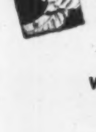
If you build, buy or sell trucks, specify Timken-Detroit Axles and Brakes! You'll find Hypoid Gearing an important Timken-Detroit feature!



HYPOID

HEAVY-DUTY GEARING

The offset Hypoid pinion is bigger and stronger. Bearings are bigger. More teeth are in contact, reducing loading per unit of contact area. Torque-transmitting capacity is increased. Slower gear ratios are practical without loss of strength.



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Detroit
AXLES

A PRODUCT OF THE TIMKEN-DETROIT AXLE COMPANY
DETROIT 32, MICHIGAN

The Accepted TDA Co Standard
TRADE MARK REGISTERED

WORLD'S LARGEST MANUFACTURER OF AXLES FOR TRUCKS, BUSES AND TRAILERS
PLANTS AT: Detroit and Jackson, Mich. • Oshkosh, Wis. • Utica, N. Y.
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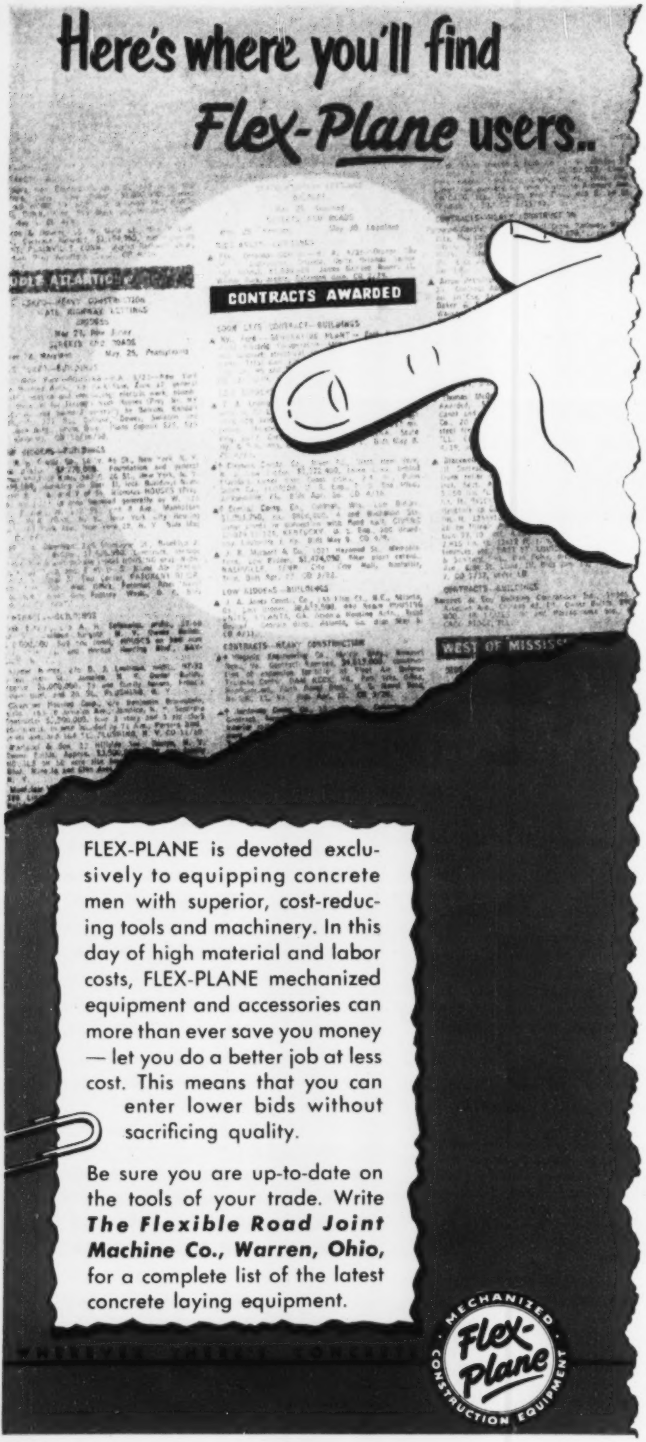


Here's where you'll find Flex-Plane users..
CONTRACTS AWARDED
MECHANIZED Flex-Plane CONSTRUCTION EQUIPMENT

FLEX-PLANE is devoted exclusively to equipping concrete men with superior, cost-reducing tools and machinery. In this day of high material and labor costs, FLEX-PLANE mechanized equipment and accessories can more than ever save you money — let you do a better job at less cost. This means that you can enter lower bids without sacrificing quality.

Be sure you are up-to-date on the tools of your trade. Write ***The Flexible Road Joint Machine Co., Warren, Ohio,*** for a complete list of the latest concrete laying equipment.

News briefs . . .

ated by the old Joint Commission and connecting the center of Philadelphia with Camden. Governor Alfred E. Driscoll of New Jersey has already signed the compacts. Congressional approval still must be obtained.

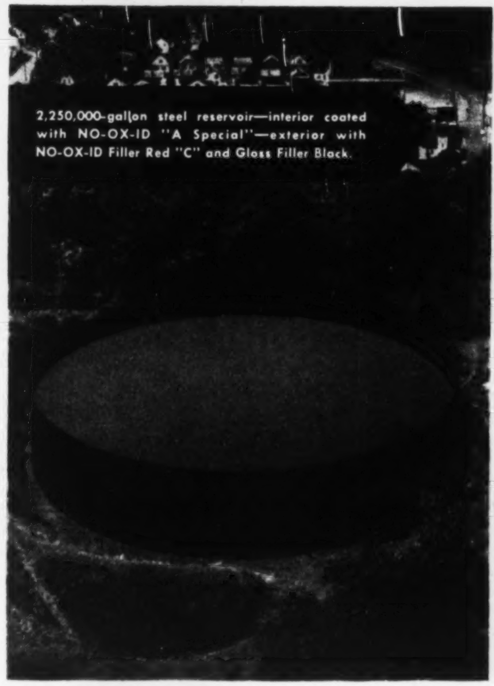
- **River diversion**—With completion of a 1,500-ft. tunnel, diversion of the Lewis River past the site for the Pacific Power & Light Co.'s $26,450,000 Yale hydroelectric dam in southwest Washington is scheduled for early fall. This is a 100,000-kw project.

- **A colorful story**—Recently there were several boys in Indianapolis with green hair, all because against orders they went swimming in the Garfield Park pool while it was being cleaned. Charles L. Brown, supervisor of maintenance for the park department, said copper sulphate had accidentally been spilled into the pool. It was removed quickly by the circulating pumps in the filter station at the park, but not before the boys' hair was tinted.

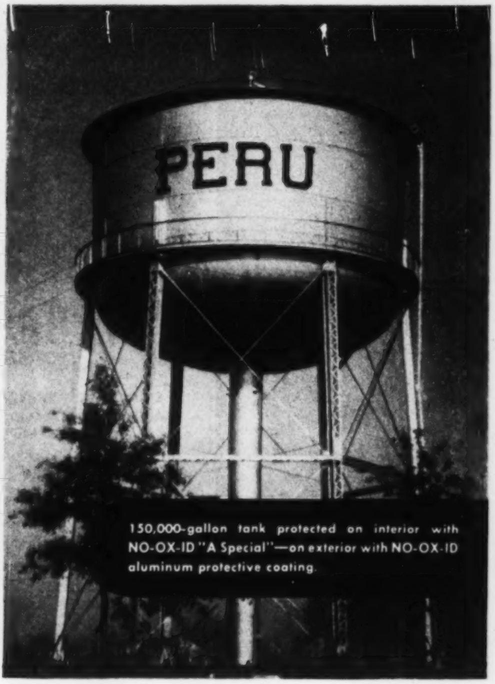
- **Bridge toll cut**—The Port of New York Authority for years has been charging 50 cents toll on private automobiles using the George Washington Bridge and the Holland and Lincoln tunnels for the Hudson River crossing, but now it is offering a 25-trip book of tickets for $10. It is expected that this reduction, together with a similar one on the Bayonne and Goethals bridges and the Outerbridge crossing connecting Staten Island and New Jersey, will save such motorists $2,000,000 a year.

THE COVER

A Puget Sound crossing comes one step nearer to reality as a board of three consultants visits the location with Charles E. Andrew, (at right) chief engineer of the Washington State Toll Bridge Authority. The board includes, left to right, John Parcel, bridge consultant, of St. Louis; Ralph Smillie, tunnel consultant, of New York; and Ralph Tudor, bridge consultant, of San Francisco. Appointed in July to study route and types of crossings, the board expects to complete its report by the end of this year. Various proposals, made during the last three years, range in cost from $60,000,000 to $72,000,000. Besides conventional construction, they include floating elements and submerged tubes. Mr. Andrew already has reported the crossing to be feasible from both engineering and financial standpoints. (ENR March 15, p. 31)—Seattle Times Photo.



2,250,000-gallon steel reservoir—interior coated with NO-OX-ID "A Special"—exterior with NO-OX-ID Filler Red "C" and Gloss Filler Black.



150,000-gallon tank protected on interior with NO-OX-ID "A Special"—on exterior with NO-OX-ID aluminum protective coating.

On water tanks . . . NO-OX-ID will

stop rust before it starts!

The water tanks and reservoirs that you erect and maintain can be positively protected from rust with Dearborn NO-OX-ID Rust Preventives. And, there's nothing complicated about it—a single coat, applied to both the interior and exterior, stops rust immediately—right then and there!

Water tanks and reservoirs are only two of the many structures that NO-OX-ID protects. Whether you build bridges or viaducts, factories or pipe lines . . . any structures where there is metal-to-metal, metal-to-concrete or metal-to-wood contact, you will *stop rust before, or after, it starts* with NO-OX-ID Rust Preventives.

A Dearborn representative will gladly discuss the important matter of rust prevention with you or your engineers.

DEARBORN CHEMICAL COMPANY
Merchandise Mart Plaza • Chicago 54, Ill.

MAIL THE COUPON FOR THIS BOOKLET

. . for complete introduction to the selection and uses of NO-OX-ID rust preventives.

Dearborn Chemical Company
Dept. ENR, Merchandise Mart Plaza
Chicago 54, Illinois

☐ Please send copy of "Introduction to NO-OX-ID Rust Preventives."

☐ Have a Dearborn Engineer call.

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NO - OX - ID
IRON + OX = RUST

THE ORIGINAL RUST PREVENTIVE

SMASHUP IN CALCUTTA... "FIXUP" HERE AT HOME!

A group of Americans motoring in India . . . A smashup in Calcutta . . . excitement, confusion, foreign tongues . . . The ominous question: "Are we covered—fully—*here?*"

In this case the answer is "yes" —for American Foreign Insurance Association had arranged the coverage before the party ever left the States—providing collision, public liability and property damage insurance in accord with the laws of each country to be visited . . . That protection, written back in New York, now puts the Americans back on their feet, their car back on the road, and settles damages all around.

American firms with cars for their men abroad, and tourists too, face stern laws relating to property damage and personal liability that vary from country to country. AFIA knows these laws — keeps abreast of all changes—can provide all needed protection in familiar American policies. It handles all claims with typical American efficiency, no matter *where* you travel.

For automobile insurance protection abroad—have your agent or broker consult AFIA—*TODAY!*

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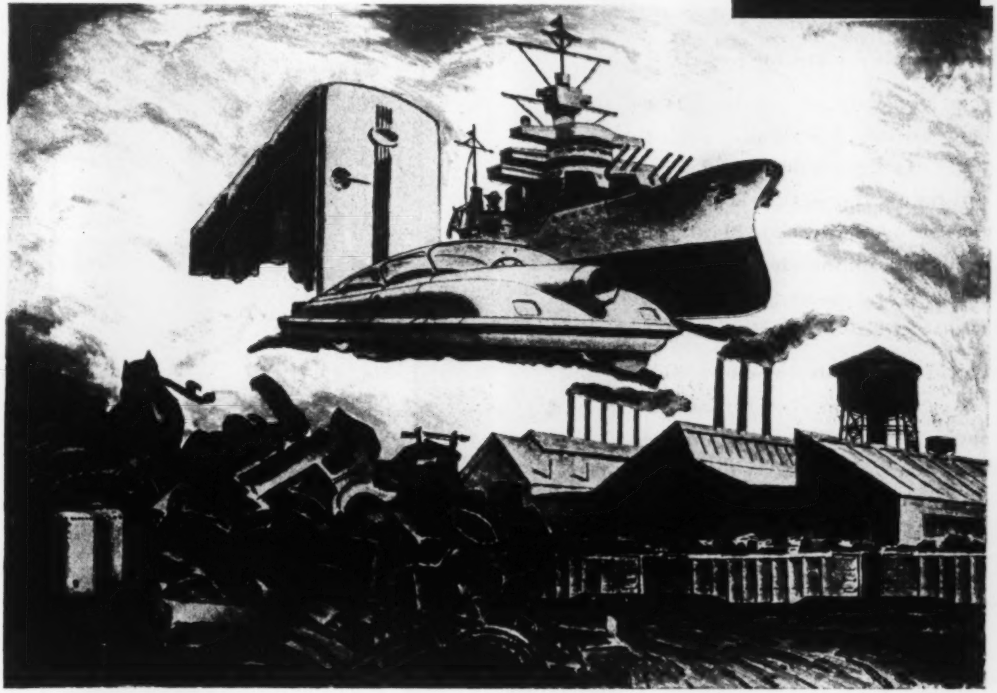
LET'S BUILD THOSE CRUISERS • CARS • REFRIGERATORS HIDING IN YOUR OPERATION!

J&L STEEL



How much scrap is wasting away in your Plant?

Yes . . . hiding . . . gathering dust . . . rusting away! Whatever your business, you probably have more scrap iron and steel laying around your plant or operation than you imagine. Today, this scrap is one of America's most precious raw materials. It is needed urgently —every single ton saves vital ore. Get *your* scrap in. *Maximum quotas of steel cannot be obtained without it.*

Check NOW. Look for obsolete iron and steel machinery . . . fixtures . . . chains . . . broken parts—any old metal that's just gathering dust. Get it all together, call your scrap dealer. He'll pay you for it and get it back into production. Do it right away.

SCRAP IS YOUR BUSINESS, TOO!

SCRAPPY SAYS:
AID DEFENSE
MORE SCRAP
TODAY...
MORE STEEL
TOMORROW

JONES & LAUGHLIN STEEL CORPORATION
PITTSBURGH 30, PA.

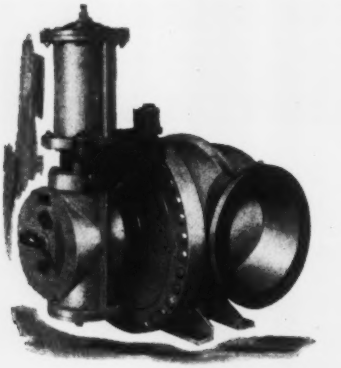
Dangerous Days -

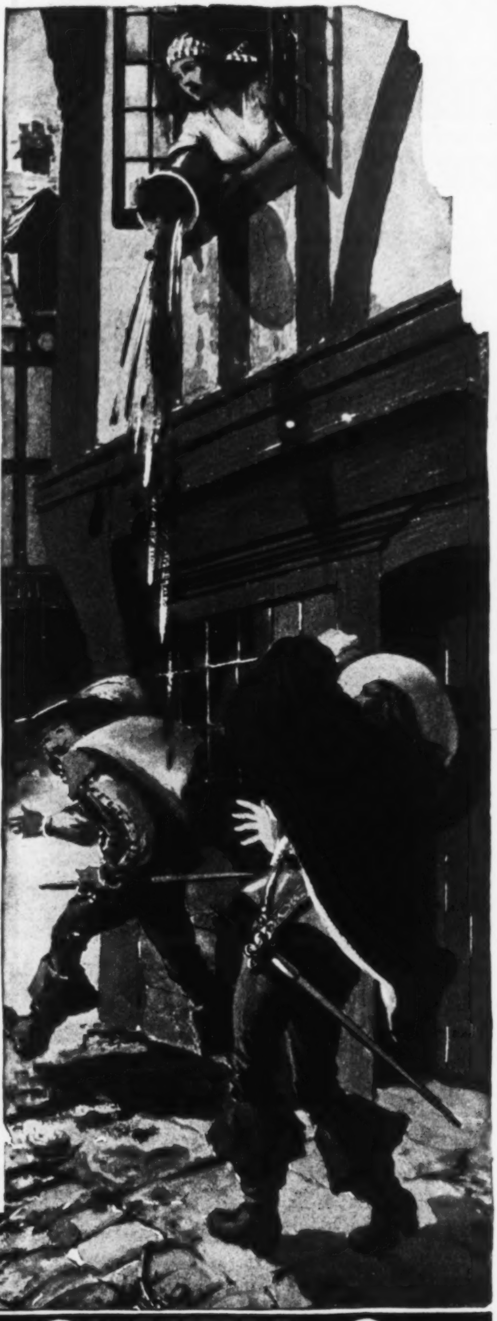
SPLASH! . . .

And people ducked for cover!

A jar of filthy, germ-laden water emptied from an upstairs window with the possibility of creating danger from contagion! But today, the picture is changed. Waterworks and Sanitation Plants handle the needs of millions—in the biggest cities on down to the small towns! How different! What a cut in the death-rate!

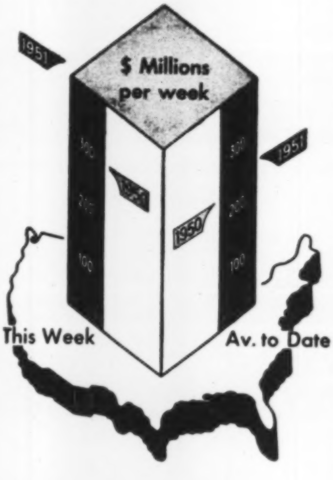
In this great advancement, Smith Rotovalves and Axial Flow Pumps have played their parts. Whatever your needs, full information on this equipment will be useful. Write us.





S. MORGAN SMITH Co.
YORK. PENNA. U.S.A.

THE CONSTRUCTION WEEK



Contracts by type of work

	This Week	Cumulative 40 wks 1951	Cumulative 40 wks 1950	% chge
Waterworks .	$2.2	$164.3	$180.8	−9
Sewerage ...	15.7	259.9	211.6	+23
Bridges	9.3	264.1	291.8	−9
Highways ...	24.3	940.6	992.9	−5
Earthwork, Waterways .	5.0	427.7	331.9	+29
Buildings:				
Public	28.2	1,745.5	1,313.9	+33
Housg., pub.	2.7	560.6	337.8	+136
Housg., priv.	49.4	1,509.3	2,701.0	−44
Commercial .	11.7	509.9	782.1	−35
Industrial ..	219.3	3,372.9	1,195.5	+182
Unclassified .	54.1	1,391.6	1,013.1	+37
Total	**421.0**	**11,146.4**	**9,252.4**	**+20**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR COST INDEX

Index Base = 100		1913	1926	1949
Constr. Cost	Oct. '51	546.48	262.69	114.56
Bldg. Cost ..	Oct. '51	403.40	218.06	114.67
Volume	**Sept. 51**	**447**	**182**	**129**

OKAY BY TRUMAN—Following a visit to Washington by Canadian Premier Louis St. Laurent, President Truman last week announced he would support a proposal for Canada to build the St. Lawrence Seaway if the project cannot be started soon as a joint U. S.-Canadian development. For Canada to take action alone, approval of the International Joint Commission is required, but opposition in Congress has been holding up such a scheme for some months. Congressional action, meantime, is not expected on additional hydroelectric power on the Niagara until next year.

PERENNIAL QUODDY—President Truman told his news conference last week that he still is plugging for the Pasamaquoddy tidal power scheme. Last fall the International Joint Commission said feasibility of the international scheme could not be determined until more was known about foundations for dams. Some data on that has just been collected by U. S. Geological Survey in testing a new sonic sounding device for off-shore work.

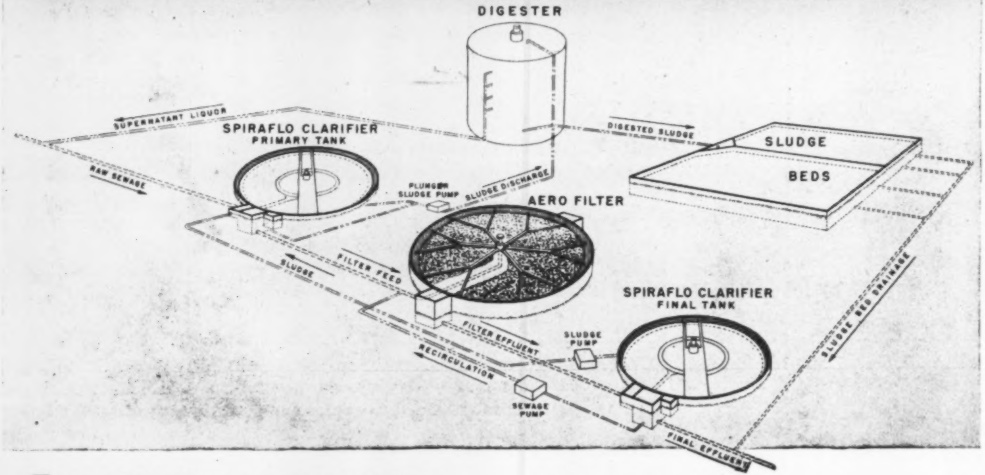
HIGHWAYS BREAKDOWN—A tabulation of reports from only 28 of the 48 states released by the American Automobile Association shows that in these areas alone work had been suspended or delayed on at least 531 major highway construction projects and 341 bridges because of lack of steel. The New York State Department of Public Works reported 150 highway and 100 bridge projects are stymied. It is receiving one-third of the steel required for current construction needs for the rest of 1951. California's Division of Highways says its allocations for the first and second quarters of 1952, are half of what is needed during the third and fourth quarters of 1951. Heavy pressure is on for a change in defense priority ratings on controlled materials which will be less stingy to the highways.

PAWCATUCK GUINEA PIG—The New England Interstate Water Pollution Control Commission has picked the Pawcatuck River between Rhode Island and Connecticut to test the efficiency of a stream classification plan for curbing pollution. Stream classification is an arrangement that sets standards of purity for each section of the waterway as a goal for future improvement. One section may have as a goal, pure enough for swimming; another for shellfishing, another for industrial use only. Engineers will then try to bring water purity to the established goal by sewage disposal and other pollution control methods. The question: Will it work?

SURPRISE! SURPRISE! Contractors were not the only ones surprised when NPA gave out an official interpretation classifying sheet metal duct work and steel pipe as structural steel (ENR Sept. 27, p. 26). NPA was surprised, too. A few days later the agency issued a correction. The items are now properly classified as "carbon steel"—not, repeat not, structural steel.

PARKWAY PLAN—Having completed a federally sponsored survey of possible routes, members of the Mississippi River Scenic Parkway Commission are starting moves aimed at federal approval of the proposed 2,500-mile parkway. A three-day discussion held recently by representatives from the ten states concerned concluded with plans to present the project to Congress in January, 1952. The states will seek federal aid for the tourist parkway which will extend from the river's source to the Gulf of Mexico.

There's a YEOMANS Plant FOR EVERY WASTE TREATMENT NEED!



THIS LOW RATE, HIGH CAPACITY TRICKLING FILTER PLANT IS ESTABLISHING AMAZING RECORDS FOR HIGH PURIFICATION AT EXCEPTIONALLY LOW COST

These figures show a typical result produced by a Yeomans installation of the "Aero-Filter" and "Spiraflo" clarifier in combination.

Overall plant efficiency is always higher when these units are used together. The method is especially effective for treating strong industrial wastes.

OPERATIONAL DATA . . . SPIRAFLO—AERO-FILTER PLANT*

1949 Date	Sewage Flow M.G.D.	Raw Sewage		Primary Effluent				Final Effluent				Overall Plant Reduction	
		Sus. SOLIDS PPM	B.O.D. PPM	Sus. SOLIDS PPM	Per Cent Reduction	B.O.D. PPM	Per Cent Reduction	Sus. SOLIDS PPM	% Reduction	B.O.D. PPM	% Reduction	Sus. Solids %	B.O.D. %
6-15	0.2996	210	255	79	62.4	136	46.6	28	64.6	18	86.8	86.6	93.0
6-16	0.2467	425	260	85	80.0	127	51.2	23	73.0	19	85.1	94.6	92.6
6-17	0.2554	410	235	124	69.7	141	40.0	28	77.4	18	87.3	93.3	92.4
6-18	0.2487	308	222	76	75.4	108	51.4	34	55.3	16	85.2	89.0	92.8
6-19	0.1753	222	218	64	71.2	132	39.5	17	73.5	—	——	92.4	——
6-20	0.2666	262	320	88	66.4	147	54.1	20	77.3	30	79.6	92.4	90.6
6-21	0.2279	240	215	78	67.5	138	35.8	19	75.7	20	85.7	92.0	90.7
Average	0.2456	297	247	85	70.5	132	45.5	24	71.0	20	85.0	91.5	92.0

* Name of plant furnished on request, as well as operating data from other installations.

"SPIRAFLO" ADVANTAGES

- Increased B.O.D. and settleable solids removal—influent is introduced tangentially into annular race around the periphery. Sewage spirals downward slowly and enters main clarification compartment at the bottom of the tank. Uniform, slow diffusion of waste under the skirt results in greatly reduced velocities and provides maximum removal of settleable solids.
- Greater removal of finely divided particles—due to upward flow through sludge blanket. This increases flocculation and results in more effective removal of finely divided particles before waste enters the effluent weirs.
- Straight-wall design minimizes construction costs.

"AERO-FILTER" ADVANTAGES

- Thorough uniform distribution—therefore costly recirculation for dilution is unnecessary.
- Operating cost is lowest of any type of complete sewage treatment.
- Uninterrupted and almost complete momentary bed coverage minimizes troubles from odors, freezing, ponding, filter, flies.
- All returns made direct to the filter—no oversize primary tank required.

FOR INDUSTRIAL WASTES, TOO . . . Many types of industrial wastes can be successfully treated by direct application to the Aero-Filter without preliminary sedimentation.

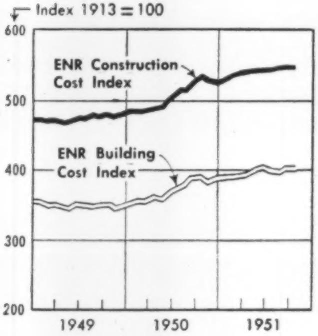
Bulletins containing full details and helpful engineering data will be sent promptly upon request.

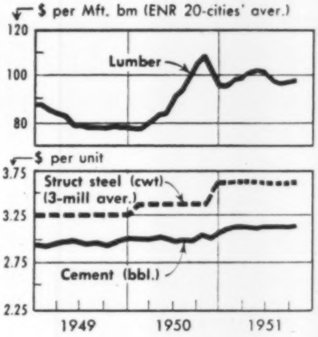
YEOMANS BROTHERS COMPANY
1445 North Dayton Street, Chicago 22, Illinois
☐ "Aero-Filter"— No. 6570
☐ "Spiraflo" Clarifier—No. 6790
Please send these bulletins.
Name ....
Business ....
Address ....
City .... State ....

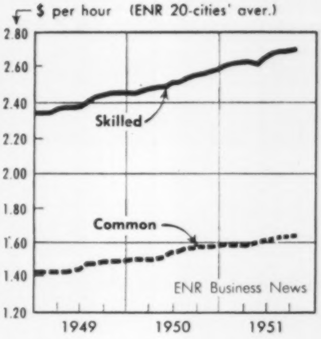
YEOMANS

A COMPLETE LINE OF SEWAGE AND WASTE TREATMENT EQUIPMENT AND PUMPS FOR BUILDINGS, MUNICIPALITIES, INDUSTRIAL APPLICATIONS

OCTOBER CONSTRUCTION SCOREBOARD







ENR INDEXES (1913 = 100)	Oct. '51	Sept. '51	% Change	Oct. '50	% Change
Construction Cost	546.48	542.61#	+0.7	535.63	+ 2.0
Building Cost	403.40	399.90#	+0.9	397.42	+ 1.5
MATERIAL PRICES (20-cities' average)					
Cement, bulk, per bbl	3.168	3.167	+0.03	3.039	+ 4.2
Structural Steel, (3-mill aver.), per cwt	3.650	3.650	0.0	3.400	+ 7.4
Sand, per ton	2.089	2.089	0.0	2.009	+ 3.9
Lumber, 2x4 Fir, per M. ft. bm	107.059	104.706	+2.2	116.976	− 8.5
Lumber, 2x4 Pine, per M. ft. bm	92.100	90.933#	+1.3	103.567	−11.1
Common brick, per M	31.101	31.051	+0.2	29.163	+ 6.6
Ready-mixed concrete, per c. y	10.880	10.885	−0.04	10.482	+ 3.8
Structural Clay Tile, 3x12x12 per M	149.850‡	149.560‡	+0.2	136.460‡	+ 9.8
WAGE RATES (20-cities' average)					
Common	1.645	1.637	+0.5	1.568	+ 4.9
Skilled (aver. 3 trades)	2.719	2.701	+0.6	2.565	+ 6.0
Bricklayers	3.012	2.972	+1.3	2.832	+ 6.3
Structural Ironworkers	2.669	2.659	+0.4	2.518	+ 5.9
Carpenters	2.477	2.473	0.1	2.345	+ 5.6

	September		%	Nine Months		%
CONTRACTS AWARDED (thous.)	1951	1950	Change	1951	1950	Change
Total U. S. (ENR reported)	$917,158	$959,530	− 4.4	$10,724,442	$8,964,416	+ 19.6
Private	455,652	590,648	− 22.8	5,644,348	5,226,398	+ 7.9
Public	461,506	368,882	+ 25.1	5,080,094	3,738,018	+ 35.9
Federal	156,701	41,754	+237.3	1,926,317	933,203	+106.4
ENR Constr. Volume Index, '13 = 100	447	484	− 7.6	550	489	+ 12.5
NEW CONSTRUCTION CAPITAL						
Total	2,167,397	3,819,060	− 43.2	8,995,072	7,157,184	+ 25.7
State & Municipal Bond Sales	204,065	229,684	− 11.1	2,488,541	2,182,488	+ 14.0
Corporate Security Sales	319,650	104,013	+207.3	1,780,085	1,489,333	+ 19.5
Federal (non-federal work)	63,344	522,000	− 87.8	151,573	522,000	− 70.9
Federal (federal work)	1,580,338	2,963,363	− 46.7	4,574,873	2,963,363	+ 54.4

	August (A) July (J)		%	Eight Months (8) Seven Months (7)		%
MATERIAL SHIPMENTS & LABOR SUPPLY	1951	1950	Change	1951	1950	Change
Cement, thous. bbls., Bu. of Mines	24,266(J)	23,167(J)	+ 4.7	136,269(7)	123,299(7)	+10.5
Fabr. Struc. Steel, thous. tons, AISC	240(A)	218(A)	+10.0	1,814(8)	1,458(8)	+24.4
Lumber, mil. ft. bm., NLMA	2,741(J)	3,265(J)	−16.0	22,371(7)	22,608(7)	− 1.0
Lumber Prod., mil. ft. bm., NLMA	3,147(J)	3,339(J)	− 5.7	23,125(7)	21,662(7)	+ 6.7
Contract Constr. Employ., thous. BLS	2,796*(A)	2,629(A)	+ 6.3	(Av.) 2,517(8)	(Av.) 2,198(8)	+14.5

* Preliminary. # Cleveland lumber corrected. ‡ Computed without Detroit as plant is closed.

The Surveyor's Notebook

Reporting on Unusual Surveying Problems and Their Solutions

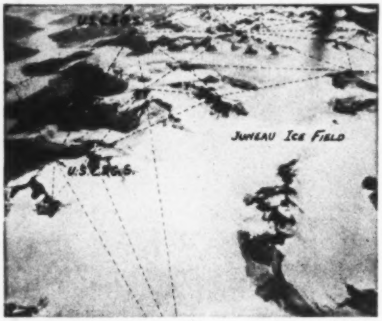
Notekeeper: W. & L. E. Gurley, America's Oldest Engineering Instrument Maker

Finding the Frozen Facts

"**Bringing horizontal** and vertical surveying control into some 500 square miles of mountain and glacial wilderness was my job on the Juneau Ice Field Research Project in 1949-50," writes Richard G. Merritt. Then a Yale undergraduate, Merritt was chosen to head the surveying for investigations supported by the American Geographical Society of N. Y., the Office of Naval Research and other organizations. He qualified through experience as a skier and mountain climber; he could handle arctic and alpine problems as well as a transit.

"My first problem in this maze of peaks, snow fields and glaciers was starting the triangulation system. The U. S. Coast and Geodetic Survey had extended third-order control to the edge of the ice field at two points, 13 miles apart. What could be more ideal: a base line as long as my longest sights. Measuring an accurate base of any length in glacier snow would be impossible.

"For stations, I chose mountain summits—a decision I sometimes regretted when reaching them became difficult. The actual surveying was the easiest part. We merely set up and shot a complete circle.



AIR FORCE PHOTO

Air view of 500 square miles of Juneau Ice Field with the principal triangles in Merritt's system.

COURTESY AMERICAN GEOGRAPHICAL SOCIETY, N. Y.

Triangulation station at 5260 feet in Juneau Ice Field: Richard Merritt reads Gurley Transit.

"Surveying also played an important role in determining the rate of surface movement of the main Taku Glacier across several profiles. This problem was unique, requiring Christmas tree-like flags placed on the glacier and positioned by triangulation. We found Taku moved as much as three feet a day at its fastest point, the center.

"The Gurley Was My Pride"

"It required roped climbing to reach most of our stations. We couldn't travel safely with packs on our backs, but hauled them up on the end of the rope. Our Gurley Transit proved stout and sturdy—had to be, to stand being dragged up perpendicular rock faces. I was worried every time the transit box bounced against the side of a peak, for the Gurley was my pride. But nothing seemed to phase that transit—not even bad ski falls. It remained in perfect adjustment."

We'd like your story for a future page in this series. Drop us a line... we'll contact you for details later. Ask for Bulletin 50 giving complete data on Gurley instruments.

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W. & L. E. GURLEY, UNION PLAZA, TROY, N. Y.

Surveying and Engineering Instruments, Hydraulic Engineering Instruments, Standard Precision Weights and Measures, Paper and Textile Testing Instruments, Reticle Making Facilities, Aeronautical Navigating Instruments, Meteorological Instruments.

GURLEY

Surveying and Scientific Instrument Makers
Since 1845

EDITORIALS

It's not easy

RESIDENTS of Salina, Kansas, still suffering from the recent flood, are critical of the way the Corps of Engineers operated Kanapolis Dam, in whose protective bulk they had put their trust. Nevertheless, the Engineers' explanation seems to hold water even if the dam was somewhat lacking in this respect. They maintained the conservation pool, as required, and they released water during the flood only when necessary to maintain some storage reserve and after the flood to get the reservoir down to conservation level as soon as possible.

There seems to be room for argument as to whether the post-flood discharges were unnecessarily rapid, but the basic trouble arises from a misunderstanding on the part of the ordinary citizen as to what a flood control reservoir can do. This trouble is inherent in all multipurpose reservoir projects, because operation must be subject to personal judgment. Had Kanapolis had a power pool as well as a conservation pool, the operation problem would have been even tougher.

Unfortunately only a few avenues for improvement are open in this difficult task of reservoir operation. Better education of the downstream population on what a dam can actually do is one; for one thing, it can't store water from rains below it. Better weather reports would aid the operator in selecting his drawdown rate; but even the best reports are not infallible. Perhaps better liaison between dam operators and city officials in time of decision would also be helpful. None of these considerations should be overlooked as more and more multi-purpose reservoirs begin to render their appointed service.

An interesting question

AT A HEARING of the House Committee on Public Works relating to power development at Niagara Falls, Earle J. Machold, president of the Niagara-Mohawk Power Co., raised an interesting question. He asked by what authority the federal government could undertake such work.

Heretofore all power development by federal agencies has been incidental to works for flood-control, navigation or land reclamation—activities that are recognized as being within the limits that the Constitution puts on the federal government. No one of these, however, is involved at Niagara. The federal government's interest, as Mr. Machold states, could only be in the preservation of the scenic beauty of the falls. That is amply provided for in the new treaty authorizing increased diversions for power.

There are at present four plans for developing additional power at Niagara from the 45,000 cfs of water that the treaty permits diverting beyond the present 20,000 cfs used by Niagara-Mohawk. These include a federal, a state and a private utility plan plus a state-private utility plan. Two of these plans contemplate construction by the Corps of Engineers, with operation by the New York State Power Authority.

Mr. Machold's constitutional question, therefore, requires a prompt answer. Niagara-Mohawk has stated its willingness to go ahead with the job alone or to cooperate in any way possible. The way should be cleared for work to start. While Canada rushes construction for the additional power allotted to it, the U. S. share of the extra and badly needed kilowatts is being shamefully wasted.

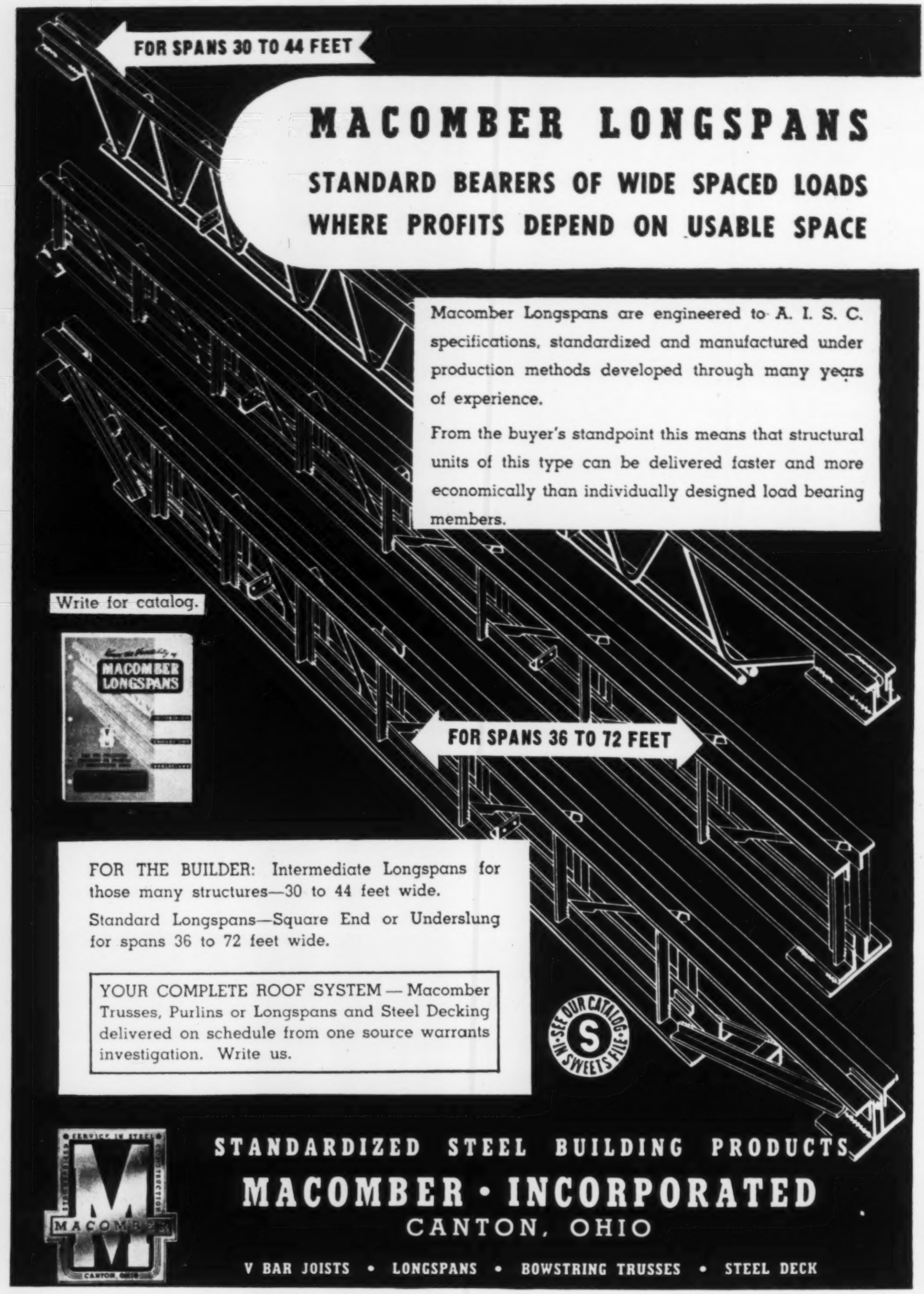
Look for the good

ATOMIC ENERGY having made its debut as a powerfully destructive force, there is small wonder that most of our thinking about it has been directed toward defense measures. Some government research, to be sure, is aimed at finding constructive uses for nuclear energy. But among civil engineers, the principal concern has been defense against A-bombs—structures to withstand the blast, radiation and heat; disposal of radioactive wastes; detection and removal of harmful amounts of radioactivity from water.

Last week A. E. Gorman, AEC sanitary engineer, in a talk before the Wisconsin Section, American Water Works Association, looked at possible constructive uses for nuclear energy and asked members of the association to do likewise. What he said is worth quoting. "It is entirely possible that a better understanding of the nuclear science and the use of atomic energy would clarify a number of unknowns. For example, how much do we really know of the reasons for good and poor chemical coagulation as an aid to water purification or the factors which control settling of suspended and coagulated solids? Have we fully explained the bactericidal effect of chlorine or chlorine compounds when added to water for disinfection? Do we really understand the phenomena which contribute to the efficiency of water filters?"

Mr. Gorman went on to say that the perennial bugaboo of corrosion might be better understood through the use of radioisotopes, which could also be used to solve problems of flow through pipe networks or to achieve greater accuracy in recording or controlling water levels in reservoirs.

There are no doubt other possibilities for constructive use of nuclear energy not only in the waterworks field but in other branches of civil engineering as well. While we are concentrating on the immediate problem of countering the bad effects of A-bombs and radioactivity it will be wise to look for the good that this new form of energy can do.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ENGINEERING NEWS-RECORD

OCTOBER 4, 1951 VOL. 147 NO. 14

Engineers' pay rule changes asked

Joint Council recommends five adjustments in regulations to Wage Stabilization Board

Five modifications of regulations of the Wage Stabilization Board as they affect the pay of engineers have been recommended to the board by the Engineers Joint Council.

These recommendations were made at the request of the board as a result of having received many complaints about inequities resulting from strict applications of its rules limiting pay increases.

The study leading up to these recommendations was made by a special committee set up by EJC's Engineering Manpower Commission. Each of the societies on EJC was represented by its secretary and at least two officers.

Gail A. Hathaway, president of the ASCE, served as chairman and Allen P. Richmond, ASCE personnel officer, acted as secretary. Other ASCE representatives were E. L. Macdonald, consulting engineer, and E. L. Chandler.

The recommendations made by EJC to the Salary Stabilization Board follow:

> **(a) Correction of salary inequities created by the current high level of starting salaries of young engineers so as to permit commensurate increases of salaries for older, qualified, and well-experienced engineers.**
>
> **(b) Correction of salary inequities in areas where engineering salaries were abnormally low at the time of the wage and salary freeze.**
>
> **(c) Clarification of Section 8 (6) e of Circular GSSR No. 1 to indicate flexibility of treatment of so-called "rare and unusual cases" as concerning engineers because of the existing serious manpower shortage of engineers.**
>
> **(d) Appropriate salary increases for professional employees and others in cases where responsibilities vary with the competencies of individuals, and where the job classifications are impracticable.**
>
> **(e) Premiums for scheduled overtime to exempt employees not to exceed the treatment given non-exempt employees in the same organization.**

In transmitting these recommendations, James M. Todd, president of EJC, stress the serious effect of the abnormally low salary levels in certain segments of the engineering profession at the time of the salary freeze and the need for correcting these inequalities to check the loss of key men. Examples are salaries in most state highway departments and many civil-service offices.

To check the tendency of engineers to shift from one organization to another, with resulting loss of efficiency, the EJC committee recommended that employers should be permitted to compensate engineers adequately.

Also it proposed that before a contract for engineering, construction or supply is let under the defense program, the agency letting the contract should determine that the contractor has an adequate engineering force or could obtain one without pirating of men from other essential work.

Engineer's charges probed in Missouri lobby case

Missouri's attorney general has been called on to decide a conflict between testimony given before a lobby investigation by Leif J. Sverdrup, a St. Louis consulting engineer, and Brainerd LaTourette, a lawyer.

Sverdrup, of the civil engineering firm of Sverdrup & Parcel, Inc., had accused Brainerd of offering over the telephone $10,000 if Sverdrup would testify favorably on road legislation. A representative of trucking groups in legal matters, LaTourette was alleged to have asked Sverdrup to state that trucks do not damage public highways more than private automobiles.

Hearings before the Lobby Investigating Committee of the Missouri House of Representatives wound up last week with the data in the case being handed over to J. E. Taylor, the attorney general, to determine if perjury had been committed and, if so, to turn the matter over to the Cole County Circuit Court.

Sverdrup had made the accusation three weeks ago and it had been denied by LaTourette. Last week the pair repeated charge and denial in a face-to-face hearing.

Warning by Fleischmann

Self-certification of critical metals by builders will be changed or terminated if abuses of the system are found, Manly Fleischmann, National Production Authority Administrator, told a Washington luncheon of the Producers Council last week.

The council, a national association of 107 manufacturers of building materials and equipment was conducting its annual three-day meeting.

At an earlier meeting, the group heard H. E. Riley of the Bureau of Labor Statistics declare that the big job for 1952 would be finding materials for home building. This year's problem—shortage of mortgage credit—is not expected to exist so widely next year, he reported. Mr. Riley estimated there would be 800,000 to 900,000 new housing starts next year.

Mr. Riley was seconded by Leonard Haeger of the National Association of Home Builders in his estimate of the mortgage situation. He did not agree on two other points, stating, first, that he thought the non-farm housing starts would be limited to 600,000-700,000 and that the building pattern would be erratic with a slow start and then "seesawing up and down."

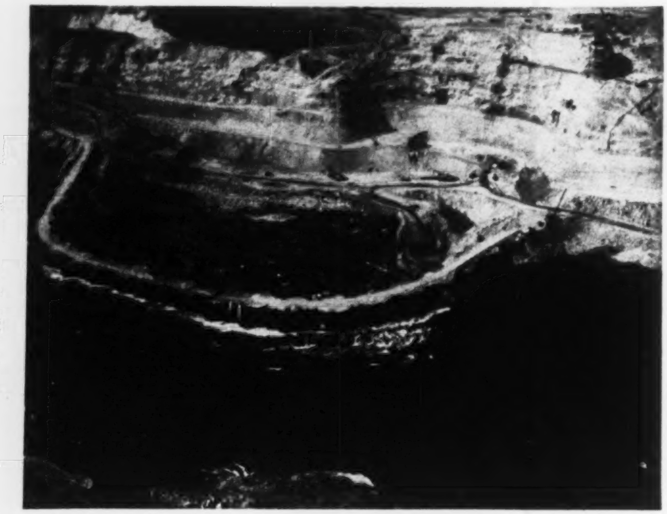
(*See complete story, p. 28*)

Senate okays road bills totaling $60 million

One bill making $45 million available for building defense roads and another providing $15 million for repair of highways damaged by floods were passed Monday by the Senate and advanced to the House.

The $45 million would be available for building access roads and others certified essential to national defense until June 30, 1953. $20 million will be available for contract as soon as the bill becomes law. Another $5 million will be spent on road work in areas used for training the armed forces.

The $15-million appropriation in the second bill would help repair damage caused this year by floods in the Midwest. This is an increase of $10 million over the $5-million fund authorized in 1950.



COFFERDAM PROTECTION—Concrete placing is being speeded on the spillway unit of Chief Joseph Dam on the Columbia River near Bridgeport, Wash. in the area protected by a cofferdam on the north side of the river. The river flows past the base of the cofferdam at a rate of 30 fps to 40 fps. Contract for the dam is held by Chief Joseph Builders, Inc. (U. S. Army Corps of Engineers photo.)

Pacific Northwest seeks power relief as aluminum production is curtailed

First real rainfall of the season drenched the parched Pacific Northwest last week and snow fell in the rockies. It held out hope that low stream levels might rise enough to relieve a power shortage which has cut 10% from the region's aluminum output.

Unless rainfall is exceptionally heavy, further industrial shutdowns appear likely. Dr. Paul Rave, Bonneville Power administrator, said additional cutbacks in power will be made about Oct. 10 if stream flow in the Columbia River continues to decrease.

Bonneville Power Administration has issued an order taking 200,000 kw from the aluminum industry and all-out emergency efforts are being made to meet the shortage. About 95,000 kw has been restored by putting high-cost steam plant into operation in the area.

This leaves three pot-lines still closed—one at Alcoa's Vancouver plant and two at Kaiser's Spokane plant. They may cost mobilization about 5,000 tons of aluminum a month. Other manufacturers also are feeling the pinch.

- **Reclamation moves**—The Reclamation Bureau released some 90,000 kw by stopping the pumping of irrigation water for the Columbia Basin project, and is generating an additional 85,000 kw from water now going into the balancing basin.

Further power slashes might be avoided if nearly six million acre-ft of water impounded behind Grand Coulee Dam were released for power production, but this is being saved against the possibility of greater need in December and January.

When the 18th and last generator went on line at Grand Coulee last month, the plant became the largest hydroelectric power producer in the world with a record 1,974,000 kw of generating capacity.

- **Doubt cast**—Weathermen were doubtful about the cause of the power shortage. Harry Down of the Weather Bureau's office at Seattle said:

"It's true we have had an unusually dry summer but we don't normally depend upon summer rains to replenish our water sheds east of the Cascade Mountains. West of the Cascades we have had an exceeding dry summer, but east of the Cascades, conditions have been rather close to normal. It is the rain and snow that falls during winter months in the areas drained by streams that feed the Columbia River that makes most of our hydroelectric power."

Real trouble, Downs believes, "has been not enough storage, not enough dams to trap and convert winter precipitation to meet the demands now being made on it."

- **Rain making**—Artificial rain-making is being attempted to increase Upper Columbia River flow an estimated 1,250 cfs during October, November and December, according to the Water Resources Development Corp., Denver.

Bonneville Power Administrator Paul J. Raver said, however, the anticipated increased generation at Grand Coulee and Bonneville dams of 84 million kwh during the three-month period would only partly offset the 215,000 kw of interruptible power Bonneville has cut off from seven manufacturers.

- **Aluminum controversy**—A threat from Defense Mobilizer Charles E. Wilson to have the aluminum industry move out of the Northwest to areas of assured power supply last week fell flat.

Alcoa, Reynolds Metals Co., and Kaiser all replied it would take more time and money to move the plants than it would to build the additional power facilities required.

Defense Electric Power Administrator James F. Fairman further discouraged the idea commenting, "We would like to know where they plan to move. There is no available power supply anywhere in the United States."

- **Wanted accord**—One aim of Wilson's move apparently was to speed settlement of differences between Federal and private power interests. Whatever reconciliation resulted did not produce any immediate power relief, however.

A $46 million loan for the Harvey Machine Co. to build plants near Kalispell, Mont. and Seattle Wash, has already been blocked by the Interior Department with the power shortage given as the reason. A House Committee has decided to investigate "certain allegation of impropriety on the part of the Harvey Co. in the conduct of World War II business for the government" and also to check on Wilson's action.

Alcoa's 85,000 tons project at Wenatchee was scheduled to go into construction in January. Kaiser and Reynolds each have 20,000-ton expansion projects in the area which may be shelved.

It is not likely Wilson will allow these projects to go ahead unless the northwest can make firm commitments of power.

- **Bright spots**—Two new developments in the power picture held promise of relief in the distant future.

- First water began backing up behind the $108 million Hungry Horse Dam this week. By October next year, the first of four 71,250 kw generators is scheduled to go into operation. Already well ahead of schedule, the dam will supply more power to the Pacific Northwest.
- Concrete pouring is being speeded in heightening the Rock Island hydroelectric dam of the Puget Sound Power & Light Co. across the Columbia River near Wenatchee, Wash. to take advantage of the low water in the river.
- Plans are afoot to add still another battery of generators at Grand Coulee which would have a 750,000 kw capacity. Cost of the installation is estimated at $150 million.
- The Navy is studying a proposal to use some of the generating facilities on ships at the Puget Sound Naval Yard to bolster the electric power supply at Bremerton, Wash. But cost would be very high.
- Work has been speeded on Chief Joseph Dam across the Columbia River north of Wenatchee, Wash. in an effort to place 250,000 cu yds of concrete before cold weather arrives.

Chapman favors building of power plants in West

A bill to construct in the Pacific Northwest fuel-fired power plants costing $90 million won the support of Secretary of the Interior Oscar Chapman last week in hearings before the House Public Works Committee.

One of six witnesses to appear before the group, Chapman called construction of the plants one of the "necessary steps" demanded by the welfare of the country. The bill would authorize construction of three 100,000-kilowatt steam plants and five 20,000 kilowatt gas turbines by the Bonneville Power Administration.

Toledo Edison Co. plans $60.6 million expansion

A new 60,000-killowatt unit and a new generating plant are the principal items on a $60.6-million construction program planned for the nexe five years by the Toledo Edison Co.

The Ohio utility will replace a 20,000-kilowatt unit at Acme Station with the 60,000-watt unit which will cost $5.7 million this year and the new generating station, with substations and transmission lines, will cost about $13.5 million. Completion of the five-year program will raise the net system capacity to 475,000 kilowatts.

A-project investigation

A congressional investigation of illegal closed shop practices and lax security conditions at atomic energy construction projects has been asked by Rep. W. M. Wheeler, Georgia Democrat.

Rep. Wheeler introduced a resolution in the House asking for the investigation after a one-day tour of the Savannah River project.

The congressman said he and an aide, wearing overalls, applied for a job and were told they would have to join a union and pay a fee of $108. This would violate the closed shop ban in the Taft-Hartley Law.

Alcoa to start new plant near Rockdale, Texas

Construction will start within a month on the Aluminum Company of America aluminum smelting plant at Rockdale, Texas. It will be carried out through a series of subcontracts under the supervision of Alcoa's construction division. Estimated cost of the plant is between $80 and $100 million.

Alcoa said that as far as possible the work will be awarded to contractors from Texas and the Southwest. The new plant was designed by Alcoa's own engineering staff and will be almost a duplicate of another Alcoa plant now under construction at Wenatchee, Washington.

The large quantities of electric power required for operation of the plant will eventually be provided by generating facilities to be built adjacent to the aluminum plant.

The power plant will be designed, constructed and operated for Alcoa by Texas Power & Light Company. It will be the first aluminum smelting plant in the nation to use electric power generated by burning lignite (semi-bituminous coal) for fuel.

Contractors set to start on Tampa Bay bridge

Contractors are soon to start work on the central span of the Lower Tampa Bay bridge, linking St. Petersburg and Bradenton. Chairman Alfred McKethan of the Florida State Road Department has signed construction contracts for more than $11 million of work.

- The Hardaway Construction Co., Columbus, Ga., has been awarded a $7,614,263 contract for building the approach trestle structures and piers for the main channel crossing, including three bridges.
- Virginia Bridge Company, Roanoke, Va., has a $3,873,991 contract for the steel superstructure of the main-channel crossing.

Previously the Road Department awarded $1,546,470 in contracts to bring awards to date to $13,034,697.

ASCE centennial meetings scheduled

Many sites in Chicago will serve as the setting for ceremonies marking the 100th anniversary of the American Society of Civil Engineers next year. Under the auspices of the Centennial of Engineering, 1952, which was created to conduct the celebration, activity will start early in the year and will be climaxed in September. (ENR Sept. 27, p. 27.) A bill has been introduced into the House of Representatives providing for the issuance of a special stamp to commemorate the anniversary of the ASCE. The table below indicates the date and location of the important events.

ORGANIZATION	HOTEL	SEPTEMBER 1952										
		W 3	T 4	F 5	S 6	S 7	M 8	T 9	W 10	T 11	F 12	S 13
Am. Conc. Inst	Stevens									X	X	
Am. Chem. Soc. (Chi. Section)	Coliseum							X	X	X	X	X
Am. Inst. Chem. Eng	Palmer								X	X	X	X
Am. Inst. Cons. Eng	Stevens						X					
Am. Inst. Elec. Eng	Congress								X	X	X	
Am. Inst. M. & M. Eng	Palmer						X	X	X			
Am. Iron & Steel Inst	Palmer									X		
Am. Ry. Eng. Assn	Palmer						X	X				
Am. Soc. Agr. Eng	La Salle						X	X				
Am. Soc. Civil Eng	Stevens						X	X	X	X	X	
Am. Soc. Mech. Eng	Sheraton						X	X	X	X		
Am. Soc. Testing Mats	Sherman								X	X		
Am. Standards Assn	Museum						X	X	X			
Eng. Council Prof. Dev	Stevens									X	X	
Hydraulic Inst	Drake	X	X	X								
Ill. Eng. Soc	Edgewater						X	X	X	X		
Inst. Traffic Eng	Sherman						X	X	X	X		
Intl. Com. on Irrigation & Drainage							X					
Intl. Com. on Large Dams				X								
Soc. Auto. Eng	Knickerbocker		X									
Soc. Am. Mil. Eng	Stevens											X
Soc. Naval Arch. & Marine Eng	Sherman			X	X							
World Power Conf			X									

Among important bond deals

New Jersey Turnpike Authority needs $35 million to complete toll highway

Holders of the bonds already issued by the New Jersey Turnpike Authority to finance construction of its 118-mile toll highway have been asked to approve the issue of an additional $35,000,000 to provide funds to complete the project. Two-thirds of the holders must approve before new bonds can be issued.

Increases in the cost of labor and materials as well as increases in real-estate costs since the estimates were made in 1949 have made it necessary for the authority to raise additional funds.

The 1949 estimates set the cost of construction at $183,925,000, and the authority planned to issue $230,000,000 initially. However, when a group of insurance companies and state corporations agreed to buy the authority's bonds as funds were required, thus making possible a saving of about $12,000,000 in financing costs and interest during construction, the authorized issue was reduced to $220,000,000.

- **Approval sought**—To date, $185,000,000 have been sold. The approval now sought will bring the authorized total to $255,000,000.

At the same time the turnpike authority is asking its bondholders to authorize it to issue at some at some future date bonds to pay New Jersey's share of the cost of a connection with the Pennsylvania Turnpike—estimated at $12,000,000—and a connection to the New York Thruway—estimated at $30,000,000.

Revised estimates of the cost of the 118-mile turnpike are $207,571,000, of which $17,632,000 is real estate, as against $10,145,000 in the 1949 estimates.

In addition to rising real-estate values and rising labor and material costs, the turnpike authority was required to build viaducts at some points where fills were estimated and had to build wider over-passes for some intersecting highways than had been planned originally.

Other important bond transactions involving construction last week included:

- **Colorado Fuel & Iron Corp.**—Plans to issue $30 million of 4½% first mortgage bonds and $10 million of 15-year debentures. Part of the money will be used to redeem $14.4 million of 4% first mortgage bonds and the rest for the construction of a new pipe mill in Pueblo, Colo.
- **Virginia Electric & Power Co.**—Plans to sell $20 million of first and refunding mortgage bonds at competitive bidding in December. The money will be used for construction.
- **Delaware River Toll Bridge Commission**—Award of a new issue of $15 million of bridge toll-revenue bonds was made by the bi-state authority to a nation-wide syndicate of investment banking houses headed by Bear, Stearns & Co.
- **State of South Carolina**—Offered last week $12.5 million of school obligations. This represents the first installment on a proposed expenditure of $75 million to expand the school system.
- **Pittsburgh Public Parking Authority**—A first Boston syndicate was to offer last week $6 million revenue bonds to build Pittsburgh parking garages.
- **Wisconsin Michigan Power Co.**—Plans to raise $5.5 million through the sale of bonds and common stock. Proceeds from the sale of stock will be used by the organization for its 1952 construction program.

Ohio highway crumbles

State Highway Director T. J. Kauer suspended two department engineers in the New Philadelphia, Ohio, office for 30 days without pay last week after a 500-ft section of Route 36 near Port Washington crumbled and cracked 15 minutes after it was opened to traffic.

Kauer said faulty workmanship was evident in the $201,122 construction job done by H. W. Holt & Son, Columbus, with Edgar Spring, New Philadelphia, a paving subcontractor. Suspended were C. H. Fritche, assistant division engineer, and E. H. Tilton, project supervisor.

Seven areas designated 'critical' for housing

Seven areas near military installations have been designated as "critical" in housing needs by the Defense Department and the Office of Defense Mobilization. In these areas credit controls will be relaxed to spur private construction. They are:

Fort Leonard Wood, including the Missouri counties of Laclede, Phelps and Pulaski; Camp Cooks and Camp Roberts, Calif. Including San Luis Obispo County and judicial townships 4, 5, 8, and 9 of Santa Barbara County.

Valdosta, Ga., including Lowndes County; Tooele, Utah, including the portion of Tooele, east of Great Salt Lake Desert and Precinct 4 in Salt Lake County; Huntsville, Ala., including all of Madison County.

Anchorage and Fairbanks, Alaska. These include all areas within 20 miles of the following: Post Office at Anchorage; Post Office at Fairbanks; Eielson Air Force Base; Elmendorf Air Force Base; Ladd Air Force Base, and Fort Richardson.

Basin group asks change

The Potomac River Basin Commission wants to have a bigger part in federal plans for water resources development. Commissioners met last week in Washington to put this in writing and give it to the Budget Bureau. The Bureau is now gathering advice on plans offered by the President's Water Resources Policy Commission (ENR Dec. 21, p. 23). Later it will draft legislation to go to Congress.

The Potomac River Basin Commissioners want their group expanded to do the job outlined in the President's plan for new regional agencies. They urge the federal government to plan new agencies only in those basins where an existing agency cannot do the job adequately.

Hearings on building code set for New York, Syracuse

Public hearings on the New York State Building Construction Code applicable to one- and two-family dwellings will be held Oct. 8 in New York and Oct. 9 in Syracuse. The code (ENR May 17, p. 35) will take effect Nov. 1, at which time it will become applicable to municipalities which accept it in accordance with New York State law.

Roanoke River Dam fight may go to Supreme Court

Secretary of Interior Oscar L. Chapman is expected to ask the Supreme Court to decide who should build a power dam at Roanoke Rapids, N. C., following a decision Monday of the Fourth Circuit Court of Appeals.

The court affirmed a decision of the Federal Power Commission that Virginia Electric and Power Com. should build a $27-million hydro-electric dam at the site near the N. C.-Va. line on the Roanoke River. (ENR Sept. 13, p. 17.)

Fairless Works spurs construction boom

The vicinity of Morrisville, Pa., where U. S. Steel Corp.'s new Fairless Works is going up, is experiencing a welter of construction activity rarely, if ever, equaled for speed and variety.

It is boomtown on a mass production basis.

Within a few miles of the plant thousands of homes, whole new planned communities, are being built. Satellite industrial plants of suppliers and steel fabricators are springing up. The transportation network—rail, river, and highway—is being revamped around the new production hub.

• **Housing rush**—Less than four miles from the plant, Danherst Corp. of Cleveland, Ohio, is erecting prefabricated Gunnison homes at the rate of over 100 a week. By the end of the year 1,100 will be completed of a scheduled 5,600 which will make up the town of "Fairless", Pa.

Levitt & Sons, Long Island, N. Y. is going through preliminaries to construction of 16,000 homes in the $10,000 class which will occupy a 2,000-acre area close by, another planned garden-type community.

Anticipated in Morrisville is a new 3,000 apartment development.

• **Industry rises** – Other industrial plants planned or under construction nearby the Fairless Works: a $3-million plant for General Refractories; a $3.4-million expansion for Warner Co., Philadelphia construction supply firm; $300,000 new plant underway for Associated Box, makers of containers for steel shipments; expansion of the Kaiser Metal Products Co. plant at Bristol; and $8-million Sun Oil refinery at Marcus Hook; a $40-million Atlantic Refining Co. expansion at Point Breeze; a large expansion of The Texas Co. refinery at Paulsboro, N. J.; fabricating plants of U. S. Steel's subsidiaries—National Tube Co., American Steel & Wire Co., and U. S. Steel Products Co.

• **Transportation changes**—Two new bridges over the Delaware, one at Philadelphia and one to join extensions of the Pennsylvania and New Jersey Turnpikes will help relieve automotive traffic.

The Pennsylvania Railroad is connecting a double track spur line to the works, and building an $8-million ore pier in Philadelphia. It plans to spend another $10 million to improve its system in Philadelphia.

Meanwhile, National Steel Co. is working on plans for another new steel works south of Camden, and two other major steel producers are considering new plant sites in the same area.

TOWNS GO UP—To house employes at the new steel works, Danherst Corp. is erecting Gunnison homes at a 100-a-day clip. The complete 5,600-home project will include shopping centers, fire houses, schools, and other community buildings. Levitt & Sons is planning a more elaborate 16,000-home development. (Wide World Photo.)

TO BUILD A STEEL WORKS—Under construction here is the No. 1 blast furnace of the Fairless Works, where facilities to produce 1.8 million tons of steel a year are speeding toward operation. (Wide World Photo.)

Producers' Council hears

Drop in construction volume forecast for 1952 by government officials

Construction expenditures this year will exceed $29 billion as compared with something more than $28 billion in 1950, speakers agreed at last week's meeting of the Producers' Council in Washington. But the rise in costs will keep 1951 from setting a record for physical volume.

In dollars, construction spending in 1952 will probably come to about $26.5 billion, roughly 10% less than this year. Harry Sheftel of the Defense Production Administration made a rough breakdown of the estimated 1952 total: $17 billion private and $9.5 billion public.

For next year he forecast that three classes of construction would increase—privately financed industrial building, military command construction, and Atomic Energy Commission work. All other types of construction will go down about 20% dollar-wise. Commercial building will continue to decrease. The dollar volume for that class of construction will be about half of 1951.

• Other predictions—As Sheftel sees the outlook, schools and hospitals will be down somewhat. There will be a decline also in sewer and water construction and in conservation works (for flood control, irrigation and navigation). Road building will be down sharply, he predicts. For housing, he expects 850,000 starts next year.

H. E. Riley, in charge of census of housing starts for the Bureau of Labor Statistics, also predicted 800-900,000 new starts for 1952. But he gave larger dollar estimates for total construction expenditures in 1951 and 1952: $29-$30 billion for this year and $27-$28 billion for next.

John T. Anderson, of Armco Steel Corp., pointed out that the peak use of structural shapes in the industrial expansion program will come in the first half of 1952. The plate shortage will continue longer, he believes. Steel people expect a dip in demand for steel in the middle of '50's, when ingot capacity will be up to 118-120 million tons.

• Warning given—John L. Haynes, director of the NPA Building Materials Division, warned that the supply of these materials is going to be extremely short in the spring. Fourth-quarter allotments to building materials were cut to less than 70% of the steel and less than 60% of the copper used in the base period. Many manufacturers will be able to produce only 30 to 50% of their base-period output. The "base" is arrived at by adding the first and second quarters of 1951 and dividing by two.

There will be no relief in copper, Haynes said, but steel should be a little easier by the third quarter of 1952.

For residential building in 1952, Benjamin I. Shulman of the Housing and Home Finance Agency plainly foresaw the likelihood that a permit system will soon have to replace self-certification for a larger part of the house building field. With mortgage money becoming more plentiful—and with inflexible down-payment ceilings set by Congress for houses up to $12,000—it will no longer be possible to allow self-certification to the builders of 85% of the new houses. Some more direct method of control will have to be used, Shulman said.

• Hospital outlook—On the outlook for civilian hospitals, Charles C. Lavin—who heads requirements and allotments for these projects in the U. S. Public Health Service—was more optimistic than Sheftel of DPA. Lavin estimated hospital and health center expenditures this year at $850 million, with 2,200 new projects already started.

Next year, he hopes to see 2,500 new starts—and construction expeditures of $945 million. But he admits the program depends on steel, copper and aluminum allotments from DPA; the full program might be cut as must as 20 or 25%.

For school construction, Ralph C. M. Flynt of the U. S. Office of Education estimated expeditures this year of $2,167 million, with $2,400 million required next year on essential structures. But allotments of controlled materials for the fourth quarter of this year has already caused deferral of $750 million of new school, college and library construction. Even the essential program may have to take some cuts next year.

Westinghouse launches $296-million expansion

The Westinghouse Electric Corp. has undertaken a $296-million expansion program extending beyond 1953, according to an announcement by President Gwilym A. Price.

Major projects already undertaken as part of the new expansion which will increase the Corporation's productive capacity 50% are: electronic tube plants at Elmira and Bath, N. Y.; an aircraft-armament plant at Baltimore; a jet engine parts plant at Columbus, Ohio; an expanded plant for generator output at East Pittsburgh, Pa.; five new lamp plants; the purchase of a plastics plant at Hampton, S. C.; a new plant at Raritan Township, N. J. which will soon begin manufacture of electronics equipment; a small motor plant at Union City, Ind., now more than half completed; provision for increased production of household appliances and television sets.

DMPA spurs expansions in critical metal output

To boost output of critical metals such as copper and zinc, the government is agreeing to underwrite purchase of new production that comes from expansion projects.

In the last two weeks Jess Larson of the Defense Materials Procurement Agency has announced agreements with:

• Phelps Dodge Corp. Company to undertake a $25-million expansion program including the construction of a new concentrating and leaching plant at the Bisbee, Ariz. mine and the enlargement of smelter at Douglas. Government agrees to buy up to 112,500 tons of the first 150,000 tons produced at the rate of 22 cents a pound, if the corporation cannot sell it to domestic buyers at a higher price.

• Copper Cities Mining Co. A $15-million dollar expansion program for the Gila County ore deposit near Miami, Ariz. DMPA will buy (at 23 cents per lb) up to 170 million lb of the first 192,500,000 lb produced by the new facilities.

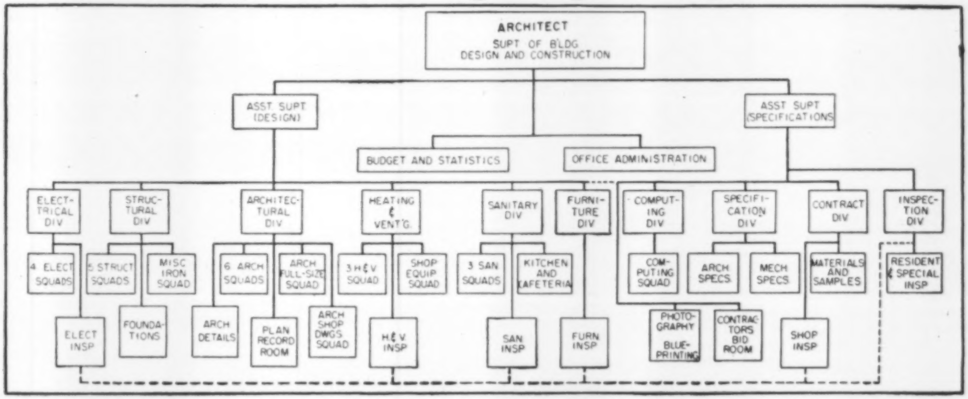
• North Butte Mining Co. DMPA advanced $60,000 for expansion at Granite Mountain Mine near Butte, Mont. Company to repay U. S. with $60,000 worth of copper at rate of 24½ cents per lb.

• Volcan Mines Co. In an agreement with a South American company, DMPA has contracted for the entire output of a 60% zinc concentrate mine at Lima, Peru. Smelters in the U. S. will handle the metal obtained from the $750,000 concentrating mill to be built under expansion.

Correction

Gerald Arnold, formerly director of the Water Department in San Diego, Calif. is scheduled to succeed Harvey Howe of Lock Joint Pipe Co. as head of the Water Resources Division of NPA. His name was omitted through typographical error in an item appearing in ENR, Sept. 27, p. 29.

School construction agency reorganizes


ARCHITECT
SUPT OF B'LDG DESIGN AND CONSTRUCTION
ASST SUPT (DESIGN)
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BUDGET AND STATISTICS
OFFICE ADMINISTRATION
ELECTRICAL DIV
STRUCTURAL DIV
ARCHITECTURAL DIV
HEATING & VENT'G.
SANITARY DIV
FURNITURE DIV
COMPUTING DIV
SPECIFICATION DIV
CONTRACT DIV
INSPECTION DIV
4 ELECT SQUADS
5 STRUCT SQUADS
MISC IRON SQUAD
6 ARCH SQUADS
ARCH FULL-SIZE SQUAD
3 H & V SQUAD
SHOP EQUIP SQUAD
3 SAN SQUADS
KITCHEN AND CAFETERIA
COMPUTING SQUAD
ARCH SPECS
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MATERIALS AND SAMPLES
RESIDENT & SPECIAL INSP
ELECT INSP
FOUNDATIONS
ARCH DETAILS
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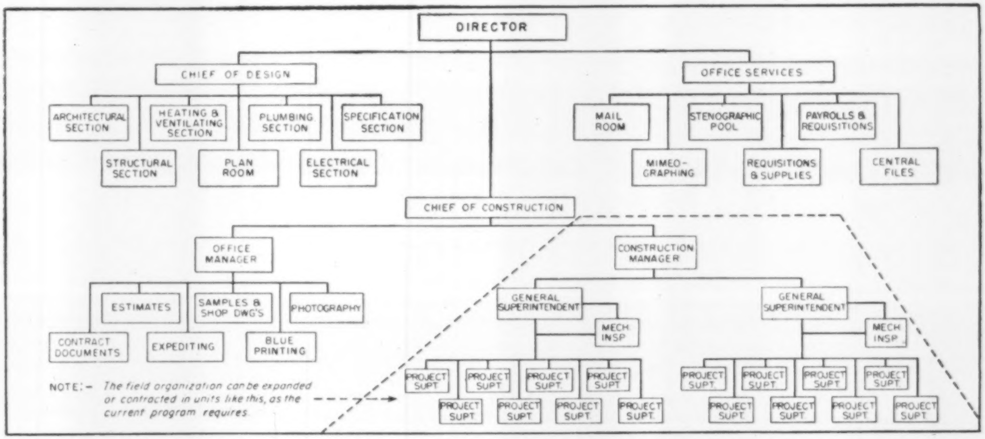
FOUND THIS—John P. Riley, loaned by the New York City Housing Authority to the city's Board of Education to improve the efficiency of the Bureau of Design and Construction, reported that the bureau lacks balanced design and construction forces, needs coordination. Design and inspection are carried out by separate offices, with no one assigned to integrate and coordinate either. Construction is handled as a stepchild. Consequently, several hundred thousand dollars are wasted annually, Mr. Riley says.


DIRECTOR
CHIEF OF DESIGN
OFFICE SERVICES
ARCHITECTURAL SECTION
HEATING & VENTILATING SECTION
PLUMBING SECTION
SPECIFICATION SECTION
STRUCTURAL SECTION
PLAN ROOM
ELECTRICAL SECTION
MAIL ROOM
STENOGRAPHIC POOL
PAYROLLS & REQUISITIONS
MIMEOGRAPHING
REQUISITIONS & SUPPLIES
CENTRAL FILES
CHIEF OF CONSTRUCTION
OFFICE MANAGER
CONSTRUCTION MANAGER
ESTIMATES
SAMPLES & SHOP DWG'S
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CONTRACT DOCUMENTS
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NOTE:– The field organization can be expanded or contracted in units like this, as the current program requires

RECOMMENDED THIS—Set up separate divisions for design and construction, Mr. Riley says. In the new setup, lines of responsibility are laid out within the divisions. Jobs are grouped for control. It is noteworthy that either engineers or architects may fill the top jobs. The board has approved the plan, in view of its large construction program. Next month, it will start taking bids for schools at an average rate of one a day for four weeks. Still needed is approval of the city budget director.

Concrete Industry Board hears changes proposed

Changes in the method of hiring inspection services and in the criterion for concrete strength were asked at a meeting of the Concrete Industry Board in New York City last week.

The board heard L. D. Long of Gulick-Henderson Testing Laboratories castigate the practice of leaving the hiring of inspection to contractors. Directly or indirectly, he said, the owner pays the bill, whether inspection is hired by the architect or contractor. Far better control of concrete quality would be obtained if the owner or architect retains the agency.

A consensus of the members present favored shortening of the time for taking specimens for testing. Generally, the 28-day strength is used as a measure of the quality of concrete desired. That means that when specimen is tested the contractor probably has poured four more stories of the building with the same concrete. If the concrete does not meet specifications, the cost of replacing it would be prohibitive. Consequently, a shorter wait was advocated. Some members proposed using the 7-day strength and extrapolating the age-strength curve to find the 28-day strength.

Railroad, state clash over Boston Artery job

Boston & Maine Railroad obtained an order from the Massachusetts Supreme Court last week halting construction on the $40-million Central Artery in Boston across its property near North Station.

Named in the order are State Commissioner of Public Works William F. Callahan, two of his aides, and six construction companies – Berke Moore, Inc., V. Barletta Co., C. J. Maney & Co. Inc., T. Stuart & Son Co., American Bridge Co.; and Harris Structural Co., Inc.

MANHATTAN'S MAIN STREET was a sea of mud after the flooding Kaw receded. The river inundated 200 city blocks.

Kansas Flood Cleanup—A Tale of Three Cities

J. Roland Carr, Associate Editor

FLOOD DISASTERS come in two phases. When floodwaters hit a city the first battle is one of survival, and the protection of life and property. After the waters recede, a second fight must be waged to rehabilitate public works, industry and private property.

The great Kaw River flood in Kansas in July unfolded this pattern again. A visit to three of the hardest hit communities points up both the magnitude of the rehabilitation job from this greatest of U.S. floods and the dispatch with which it is being accomplished. There are lessons from the battle for every other flood-threatened city in the land.

The three subject cities are Topeka, Manhattan and Salina. Topeka is 70 miles due west of Kansas City, and Manhattan is 50 miles on to the northwest. Both are on the Kaw. Salina, 70 miles southwest of Manhattan, is on the Smoky Hill River which joins the Republican River at Junction City to form the Kaw. As the city nearest the only completed large reservoir in the projected flood control system, Salina's experience is of special interest.

Manhattan took worst beating

No city has ever been hit by a flood without being confronted with unpredictable situations and unforeseen problems. But for a city of its size (population 19,060) Manhattan had more than its share of problems during the July flood. To mention a few:

Nearly half of the city was inundated and left covered with muck, sand and silt . . . water stood 6 ft deep in city hall . . . city property and public works suffered $1,500,000 damages . . . the city's entire water supply was shut off . . . sewers were clogged.

• **Big clean-up job**—Within 96-hours after the Kaw had crested at Manhattan on July 13, city forces started the back-breaking job of cleaning up. On July 19 the Corps of Engineers arrived and took over the responsibility of completing the job, as well as financing it.

By Aug. 9, when the task was completed, 29,000 cu yd of silt, sand and muck had been removed from the city's streets, alleys and sidewalks; plus 1,200 truck loads of destroyed merchandise, ruined store fixtures and debris. This material was removed from a 200 square block area, including 20 blocks in the business district.

Three disposal areas were selected for the material. Decayed food, garbage and glass were placed in sanitary fills. By quickliming the disposal pits for the perishable food, all stench from its decaying was gone within three days.

Store owners were told to dump their ruined merchandise and fixtures in the street where it could be picked up by the clean-up crews. Private home owners were likewise told to push the mud and debris off their sidewalks into the street, and to place their garbage containers on the parking areas to facilitate garbage collection.

Broken plate glass mixed with the mud was a serious menace to pneumatic tired equipment. This was so bad on some downtown streets that only track-type loaders were used.

The clean-up job cost $86,800 and required 22,500 manhours of labor including equipment operators' time. The equipment effort, totaling 14,400 hours of operation, included: trucks, 9,900 hr; front-end loaders, 1,330 hr; bulldozers, 1,180 hr; patrol graders and tractors with grader blades, 1,600 hr; truck cranes, cranes, winch trucks and miscellaneous equipment, 390 hr.

This gigantic clean-up task was performed by contract on a cost plus 15% basis. This 15% for overhead and profit included job supervision, office and clerical help and public liability insurance. The Walters Sand and Construction Co. Manhattan, was the principal contractor, aided by 10 subcontractors.

Two 10-hr shifts were operated during 10 days of the 26-day clean-up period, and one 10-hr shift during the other 16 days. A 7-day week was worked. Labor rates were $1.00 per hr for common and $1.75 for skilled and equipment operators: No premium payments were made for overtime. Equipment rental rates were set up on a non-profit basis.

• Public works damage $1,500,000–Conservative estimates place the damage to city owned property and facilities at $1,500,000. Business and commercial losses may reach $12,000,000 while damage to homes and personal losses may total $8,500,000. Should these losses prove reasonably correct the loss will average about $1,150 for each man, woman and child in Manhattan.

The city appealed to Governor Edward F. Arn, for $650,000 of state aid to help it recover from its $1,500,000 loss. This was broken down as shown in the accompanying table.

MANHATTAN'S REPAIR NEEDS	
Sewer cleaning	$50,000
Sewer reconstruction	150,000
Sewage pumping facilities	50,000
Street reconstruction	150,000
Street resurfacing	50,000
Asphalt sealing	20,000
Rehabilitating water wells	75,000
Water main repairs	50,000
City hall repairs	25,000
Rehabilitating police records	10,000
Evacuation expenses	10,000
City vehicle damages	5,000
Spraying (insects and odor control)	5,000
	$650,000

A four-man state-appointed appraisal team, however, cut this request to a total recommended sum of $462,950.

• All city wells flooded–Manhattan's five deep wells, from which it gets its entire water supply, were turned off when rising waters threatened to flood the motors in the pumping station. Fortunately the city's 4.5-mgd filtration plant was not inundated, but water rose to within 6 in. of the plant's operating floor.

When the wells were shut down, however, quick action on the part of city officials kept up water pressure in the distribution system. One city-owned fire pumper and one borrowed from Kansas State College were rushed to the filtration plant. Two street department pumps–a 4-in. and a 6-in. –also were quickly dispatched to the plant site.

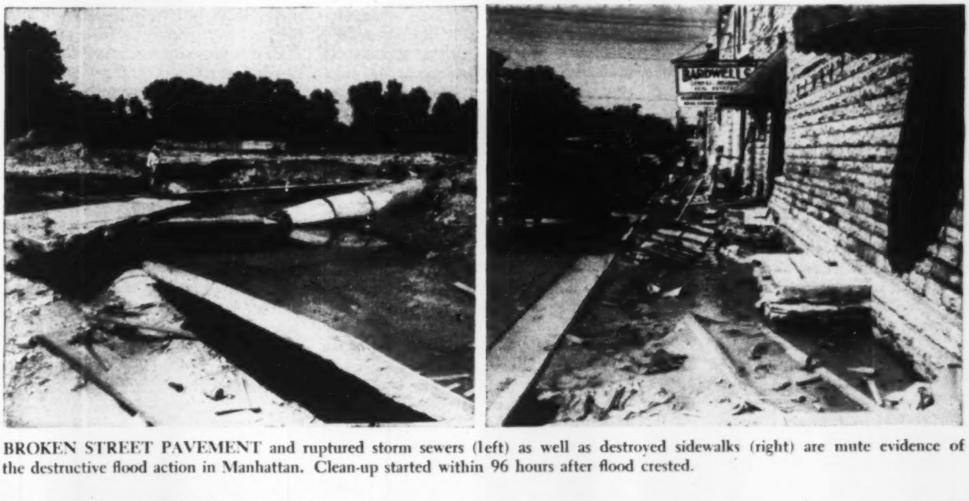
All four units pumped directly from the flood surface into the filtration plant, through flexible hose lines. Although all Manhattanites were warned to boil their water for about 10 days, heavy chlorination of the water kept it safe for domestic usage during the entire emergency.

One 1,000,000-gal elevated tank was held in reserve for fire fighting, while the city as a whole had to get by on what the four emergency pumps could furnish. But this didn't work too great a hardship. Pressures were low in the higher parts of the city but all consumers had water at least a part of each day.

Studies already are underway to prevent a recurrence of this water failure. The city plans to enclose its low lift pumps–which deliver water from the wells to the filtration plant–in a reinforced concrete pillbox type encasement.

It will have access from the top only, and will be tall enough to prevent flood water from ever again knocking the pumps out of commission. The low lift pumps and motors will be raised about 3½ ft, since floodwaters rose to just below the base of the motors.

• Big job of sewer cleaning–Similar to many other cities along the Kaw, Manhattan has an unprecedented



BROKEN STREET PAVEMENT and ruptured storm sewers (left) as well as destroyed sidewalks (right) are mute evidence of the destructive flood action in Manhattan. Clean-up started within 96 hours after flood crested.

sewer-cleaning job on its hands. There are from 60,000 to 70,000 lin ft of sanitary sewers and at least 10,000 lin ft of storm sewers to be unblocked and cleaned. Several sewer-cave-ins must be repaired.

About 25,000 ft of sanitary sewers have been cleaned to date of this writing, and the entire job was to be finished by Oct. 1. Smith and Loveless, Kansas City, Mo., cleaned the sanitary sewers under contract prices at 60¢ per foot for 8-, 10- and 12-in. lines; 65¢ per foot for 15- and 18-in. lines; and 75¢ per foot for 24-in. lines. City forces are cleaning the storm sewers.

Smith & Loveless operated two of their "Norcam" cleaning units. In this process a high-velocity jet is lowered into one manhole and propelled through the sewer by a head of water in the manhole. Sand, muck and all other material are flushed ahead to the next manhole, where it is pumped up into a 2,000-gal tank truck by a suction pump. Baffles in the tank retain the material from the sewer, with the clean effluent being returned to the outfall line through a second hose line.

• Repairing sewer breaks—One of the worst headaches in the sewer-cleaning program is repairing the breaks in the lines. So far, 15 breaks are known to exist. City forces are doing this work. Much of Manhattan is located above an old river channel. This means that many of the sewers are located either in or beneath layers of quicksand.

With the groundwater still at an abnormally high level, dewatering the area containing a sewer break is a major problem. Several of these breaks are in confined working areas in the downtown alleys.

After a break in sewer line has been located—usually by the sewer-cleaning crews—the length of line to be repaired is encircled with steel sheetpiling, to protect adjacent building foundations where necessary and to permit dewatering of the area. The enclosed area then is dewatered with a wellpoint system, using a close spacing of the points. Because of quicksand, wellpoints must be gravel-packed.

The city's sewage pumps were flooded out on July 11. After the water had receded they were overhauled, bearings were cleaned of sand and muck, and they were put back in operation on July 22.

• Temporary housing—One of Manhattan's most pressing problems is that of providing temporary housing for 100 of its homeless families. The city has received on loan 50 trailers from the Housing and Home Finance Agency, 25 more will arrive shortly and another 25 have been requested. Contracts amounting to $15,800 have been awarded for the installation of service facilities for the first 55 trailer units.

• Men in charge—A great number of civic employees played important roles during the evacuation, cleaning up and reconstruction planning for Manhattan. Men in charge of this work include W. B. Avery, city manager and D. C. Wesche, city engineer. Lt. Lloyd W. Weller, Manhattan Area Engineer, Corps of Engineers, was in charge of the emergency clean-up of the city.

Topeka cleanup took 18 days

Although Topeka's damage was more confined than that in low-lying Manhattan, its public, commercial and personal property flood bill will be in the neighborhood of $25,000,000. And its public clean-up program—started just as soon as the waters began to recede and virtually completed 18 days later—is an outstanding example of public, private and governmental cooperation. Residential rehabilitation — seemingly an almost hopeless endeavor—will take a much longer time.

Here's how the flood damages added up in this city of 78,000 population. Public property and facilities suffered to the extent of $2,250,000 as shown in the accompanying table.

TOPEKA'S REPAIR NEEDS

Water treatment plant	**$360,000**
Water mains	**10,000**
Cleaning sanitary sewers	**395,000**
Cleaning storm sewers	**145,000**
Repair sewers	**350,000**
Sewage pumping stations	**10,000**
Street repairs	**400,000**
Repair Kansas Ave. bridge	**125,000**
Repair 4 parks	**155,000**
Municipal airport	**50,000**
Medical supplies and sanitary clean-up	**250,000**
	$2,250,000

In addition there was about $20,000,000 of personal and commercial damage. North Topeka was hit the hardest. Damages to residences, churches, schools and neighborhood schools there will run $9,000,000, while the damage to commercial and industrial property is estimated to be $5,000,000. On the south side of the Kaw, estimated damage to residences, schools, commercial and industrial enterprises will run about $6,000,000. Schools in this area were damaged about $80,000.

• A fast clean-up job—The emergency clean-up job in Topeka took only 186 working hours during the 18-day period, from July 18 to Aug. 4. It was performed by five local contractors operating under the name, Topeka Disaster, Inc. Over-all supervision and funds for the work were furnished by the Corps of Engineers.

Statistics alone can not begin to tell the story of this tremendous undertaking, but they may give a fair measure of the extent of the job. For example, 300,000 tons of mud, sand and silt, and 42,000 tons of debris were removed from streets, roads, bridges, and the municipal airport. No attempts were made to clean the alleys in this operation, since opening the streets to traffic, unblocking the sewers, and eliminating health hazards, were primary objectives.

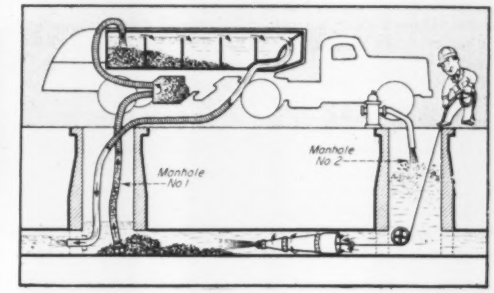
In all, 33 miles of city streets and access roads within the city were cleared of sand, silt and debris. Thirteen miles of streets were recleaned after residents and business places had cleaned their establishments and had deposited the refuse in previously cleared streets.

Other major clean-up and emergency rehabilitation items included: the opening of 2-miles of city sewers . . . cleaning the city's water pumping station and placing it in operation . . . repairing washed out roads with 5,700 cu yd of material . . . providing temporary sewage pumping facilities for the city . . . providing access to all fire hydrants and storm sewer inlets in the flooded area . . . emergency work to place the municipal water works plant and municipal airport in operating condition . . . and opening 21 miles of county roads to traffic.

At the height of the clean-up operations 117 pieces of heavy construction equipment and 170 trucks were being used, together with 450 workmen. The cost of the entire job was $326,000. Contractor costs included: $117,500 for labor; equipment rental, $132,000; materials, $34,500; and miscellaneous work, $30,000. In addition government costs of labor, plant, materials, and miscellaneous items totaled $12,000.

• Non-profit clean-up—The tremendous emergency task of cleaning up Topeka was performed on a non-profit

SOUTHWESTERN NORCAM
SEWER MAIN CLEANING



SEWER CLEANING is one of the biggest problems in Manhattan and Topeka. Special cleaning truck (at left) operates as shown in sketch (at right). High pressure nozzle flushes material to manhole where it is sucked up into 2,000 gal. tank equipped with cross-baffles, while clean effluent returns to the outfall line.

basis. The labor rate was established at a flat $1.50 per hr, including equipment operators and superintendents.

Hourly equipment rental rates were established at 1/48 of the AGC weekly rental rates. No premium payments were made for overtime, although the average working day was 12 hr, 6-days per week.

To get the big, clean-up job started each of the five contractors in Topeka Disaster, Inc. advanced $5,000 to purchase necessary supplies and meet labor payments. When this fund was exhausted they each put in $5,000 more: All of these advanced were subsequently reimbured by the Army Engineers. Clean-up equipment was shipped in from a wide area, extending as far away as Des Moines, Iowa; and 10 contractor firms sent both equipment and operators.

All work projects performed by Topeka Disaster, Inc. were initiated by a 7-man screening committee made up of two contractors, two professional engineers, two labor representatives, and the city engineer. After being further screened by local representatives of the Army Engineers the jobs were passed on to the contractors for execution.

The five local contractor firms making up Topeka Disaster, Inc. were: M. W. Watson Const. Co., Kaw Paving Co. Inc., Bennett Const. Co., Douglas Const. Co., and A. F. Reis. Wm. Douglas was project manager for the contractors.

• Sewers cleaned by contract – Although sewer cleaning carried top priority in the rehahibitation program, city officials decided to do it on a contract unit price basis, rather than cost-plus. This took a little time to survey the damage, prepare cost estimates, advertise and take bids on the work.

This procedure, however, was credited with saving the city considerable money. The engineers' estimate for cleaning 329,000 lin ft of sanitary sewers (6-in. to 66-in. dia) and 111,000-ft of 10-in. to 108-in. storm sewers was $557,000.

Two contract offers were received on Aug. 21. Smith and Loveless, Kansas City, Mo. won the contract on their low bid of $281,000. This bid was only $11,000 lower than the second bid.

Contract unit prices vary from 45¢ per lin ft for 6-in. sanitary sewers to $1.61 for the 66-in. lines. Storm sewer cleaning prices range from 49¢ per lin ft for the 10-in. size to $2.45 for the 108-in. dia lines. The contract unit price for cleaning 780 catch basins is $15.00. Starting date was Aug. 31, with completion date Nov. 30.

• Water plant marooned–Despite its being marooned several days by the flood waters, the city's 15-mgd water treatment plant was kept in operation. Biggest problems were to supply chemicals and fuel oil for plant operation, and to pump wash water, surface and seepage water out of the area. Several breaks occurred in the plant's sewer system.

Railroad and highway service to the plant was flooded out when the flood waters rose to within 6-in. of the top of the protecting earthfill levee and concrete floodwall. But chemicals needed for water treatment, as well as 200,000 sandbags for levee protection were hauled in over a quickly constructed road. This road, about ½-mi long, was graded and graveled, by a group of contractors, within a 12-hour period.

The plant's supply line of fuel oil was also flooded out but steam pressure was maintained by laying a 1,500-ft. emergency line of 2-in. and 2½-in. pipe. This pipe-laying job was completed within three hours. Tank trucks supplied fuel oil at the upper end of this line.

Topeka gets its water supply from the Kaw River through an intake located in front of the plant. The low-lift pumping plant was not flooded out, although it was necessary to devise a substitute for a clogged discharge line, and to bring in an additional dewatering pump to handle wash water and flood seepage.

• Maintained 30 psi pressure–Normally the water system operates under a pressure of 65 psi. During the flood emergency this pressure never dropped below 30-psi, in spite of a large number of broken service connections and some water mains. The greatest loss of water occurred in North Topeka where 200 or more ⅜- to 1¼-in. service connections were broken when houses and small business establishments were washed off their foundations or floated completely away.

Waterworks officials, however, decided to keep pumping water into North Topeka for two reasons. By maintaining pressure in the lines there would be little chance of the supply becoming contaminated. Also the state hospital and several vital industries are served by the northside system of water mains.

• Trailer camp housing–Topeka is providing trailer units to house its homeless families. The city supplies all facilities and the FHHA is furnishing the trailers on a one-year loan. Monthly rental is $35 per unit for four persons and $40 for six, plus the cost of utilities.

A $78,500 contract was awarded to the Douglas Construction Co., Topeka, on Aug. 25 for preparing the site and installing facilities to service 244 trailer units.

• Contractors and engineers – Space does not permit listing all those city officials and engineers connected with cleaning up and rehabilitating Topeka. To name only a few in top supervisory jobs: Mayor W. Kenneth Wilkie led the flood fight from City Hall. Others include: C. M. Willson, commissioner of streets; W. E. Briscoe, city engineer; Lloyd B. Smith, water commissioner; D. B. Kissinger, superintendent of sewers and: G. D. Pelton, waterworks superintendent. Capt. Robert H. Allan, area engineer, Corps of Engineers, represented the Army Engineers in Topeka's emergency cleanup program. M. King is county engineer of Shawnee County.

Salina suffered despite dam protection

Although flood water covered nearly two-thirds of Salina—ranging in depth from curb-full up to 5 ft—the clean-up job was small compared to Manhattan and Topeka. Some silt and debris had to be hauled away but, chiefly, it was a task of sweeping and flushing the streets clean. The total flood damage for this city of 26,000 is estimated at $2,100,000 of which municipal facilities account for $250,000.

Salina has a number of crushed-rock and gravel-surfaced streets. About 15 miles of these were washed out to an average depth of 12 in. This repair job, being performed by city forces, is nearly half finished. The city lost about 4,000 lin ft of asphalt street pavement, which is being completely rebuilt by city forces. The city also lost one of its 7 bridges over the Smoky Hill River, containing one 90-ft truss span and two 20-ft approaches.

• It could have been worse—Salina would have been hit much harder by its big July flood had it not been for the Kanopolis Dam located about 40 miles upstream on the Smoky Hill River. Three lesser floods earlier would also have caused damage had the dam not been in service. These conclusions of the Corps of Engineers, who built and operated it, are not completely shared by all Salina residents, and local criticism of the operation of Kanopolis dam before, during and after the big flood can be heard.

The facts seem to be these: Kanopolis dam is designed to impound 50,000 acre-ft for water conservation; plus a maximum of 400,000 acre-ft for flood control. On May 8 of this year the reservoir surface was within a few tenths of a foot of the conservation pool (El 1459). Heavy rains upstream during the next several weeks necessitated storing large volumes of water to protect Salina. These waters were stored and released in such quantities as possible throughout June and the early part of July.

The rates of release depended on the rainfall below the dam. And, since this rainfall was unusually heavy no large quantities of water could be released without flooding the Smoky Hill River. Consequently, the reservoir level built up gradually to El. 1507, representing a total storage of 434,000 acre-ft. Since this was within 1-ft of the top of the fixed-crest, uncontrolled spillway, the controlled discharge was increased to 5,500 cfs to prevent any water from going over the spillway.

During July 9-11, a 9-in. rain fell over a large portion of the watershed between Kanopolis Dam and Salina. This was the final blow, creating the flood crest in the city on July 13.

• Local criticisms—Local interests in and around Salina criticize the operations of Kanopolis Dam on three points. First, they contend that if the reservoir level had been drawn down to nearly empty during the early part of May instead of being at the conservation level, there would have been an additional 50,000 acre-ft of flood storage capacity. The Army Engineers contend that this would have been contrary to one of the primary purposes of the project, and furthermore that in May no one could foresee that the conservation pool would not be needed.

Secondly, some Salinans point out that if no water had been released from the reservoir during the first part of July the flood damage would have been less. From their daily flow records the Corps of Engineers show that the amounts of water released from the reservoir had little effect on flood crest elevations downstream. They also point out that with the reservoir level within 1-ft of the uncontrolled spillway, some freeboard had to be maintained or there would be no control over any additional heavy inflows.

The third criticism was that after the flood crest had passed Salina, controlled discharges from the reservoir were so great that they postponed the return of the Smoky Hill river within its banks. This retarded road reconstruction and farmland rehabilitation in low-lying areas. This procedure was necessary, the Army Engineers say, to reduce the reservoir to conservation level as a safeguard against future floods.

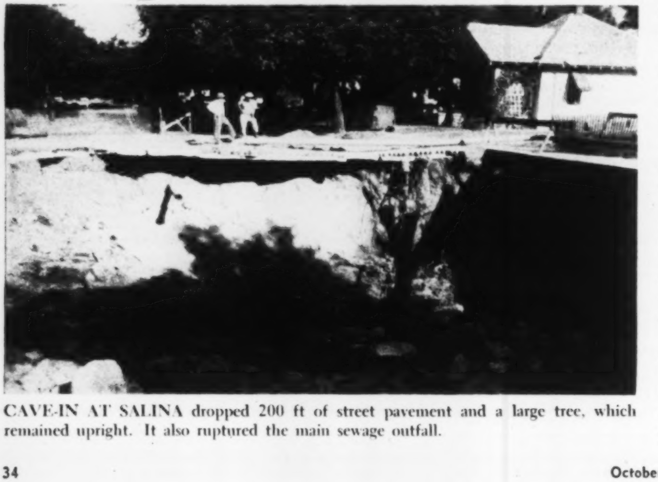
And there the matter stands. At present, the reservoir is being drawn down at the rate of 3,800 cfs which is the amount that can be handled by the river. Providing there are no big rains upstream, the conservation pool elevation will be restored about Oct. 10 of this year.

• Big sewer break—In the meantime the city still faces one of its toughest reconstruction jobs—repairing a bad break in its 36-in. sewer collector main. This sewer, located 24 ft below the surface of one of the main streets, feeds into a pumping station which pumps the sewage to the city's treatment plant.

Flood pressures and saturated quicksand surrounding the sewer caused its failure. As a result, about 200 lin ft of 40 ft wide street surface caved in.

Until this sewer break is repaired it is necessary to discharge the city's sewage into the Smoky Hill River. Three 3,000-gpm pumps located at manholes near the river—between the break and the city—are pumping all domestic sewage into the stream.

This sewer repair job, as well as other public works reconstruction, is being done under the supervision of H. F. Harper, city engineer, reporting to E. J. Allison, city manager. L. M. Srack is superintendent of streets.



CAVE-IN AT SALINA dropped 200 ft of street pavement and a large tree, which remained upright. It also ruptured the main sewage outfall.

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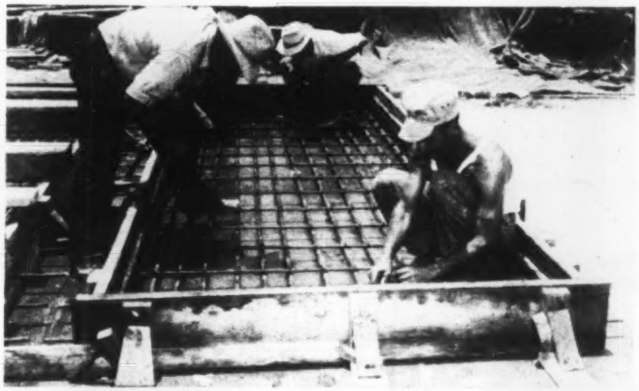
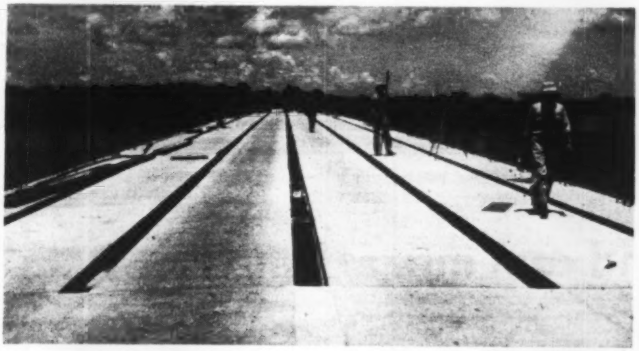


IN WOOD FORMS like this, 24 slabs were precast weekly for the 15-ft spans of a 2-lane highway bridge in Florida. Piles also were precast.



STRIPS were left between the slabs for later filling with concrete, to tie the structure together. Curbs and handrail posts were cast in place.

Precast slabs make low-cost bridge

V. R. Gorham
Vice President
Cleary Bros. Construction Co.
West Palm Beach, Fla.

SUPERSTRUCTURE work for a two-lane highway bridge in Florida cost the state only $82.50 per lin ft. This low cost is mainly attributable to the use of precast concrete slabs for the bridge deck.

Located at Placida, in Charlotte County, the bridge is 40 ft long. It has a 24-ft roadway, with a 2½-ft sidewalk on both sides. It is supported on five-pile concrete bents spaced 15 ft on centers.

Design of the superstructure is similar to that being used by the maintenance forces of the Florida State Road Dept. in the Miami area (ENR June 7, p 40).

• Slabs span 15 ft—Each of the spans has a deck composed of six precast slabs. These are 5 ft 4 in. wide, 15 ft long and 10 in. thick. A 15-ft deck requires 16.4 cu yd of concrete and 2,830 lb of reinforcing steel.

The slabs are reinforced longitudinally with ¾-in. bars 5 in. on centers at the bottom and with ½-in. bars about 20 in. apart at the top. Transversely, they are reinforced with ⅝-in. bars 5 in. on centers at the bottom and with ½-in. bars 18 in. apart at the top.

The ⅝-in. bars protrude 9 in. beyond the edge of the slab. When the slabs are in place on the pile bents, these bar extensions are encased in concrete, tying the structure together.

• Short haul—The contractor set up his casting yard adjacent to the bridge site. There he cast a concrete slab large enough to serve as the bottom form for 24 slabs. Side forms were wood.

The same casting slab also was used for forming the precast concrete piles, which are 14 in. square and 55 ft long. When cured, the piles were driven with a single-acting steam hammer and two 2½-in. water jets from a derrick boat. Then they were capped with cast-in-place concrete to form the bents, ¾-in. dowels being provided in the caps for anchoring the deck. Contact surfaces between superstructure and substructure were covered with tar paper.

Slabs were produced at a rate of four decks per week. Concrete was a six-bag mix, with high-early strength cement, which has a compressive strength in excess of 3,000 psi in seven days.

Two inserts with ⅞-in. eyebolts screwed into them were incorporated in each unit for lifting and moving. These bolts were placed in the top face along the centerline 3 ft from the ends of the slabs.

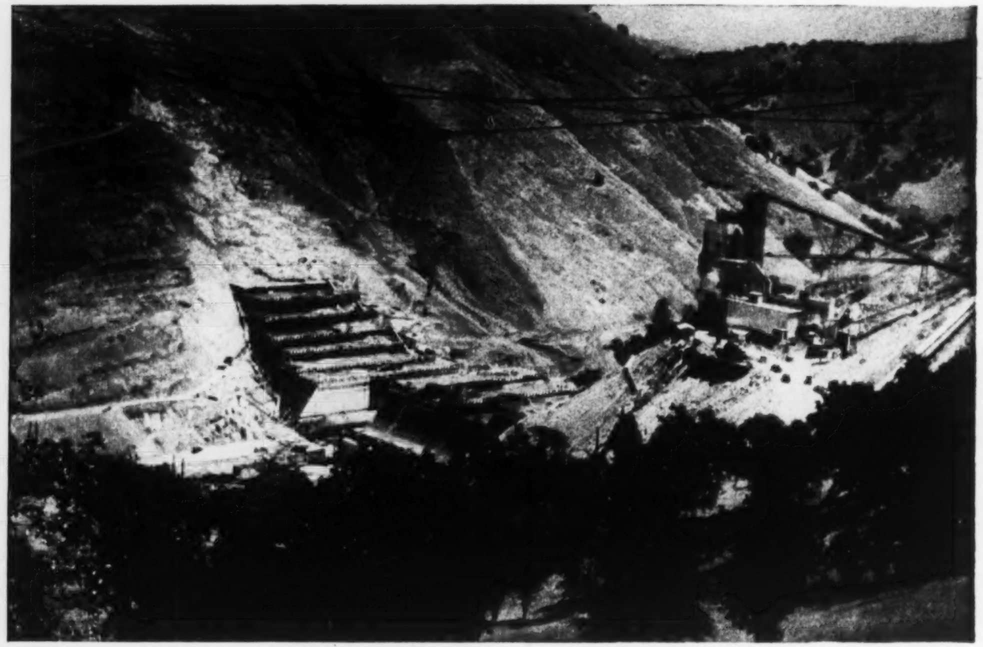
After being cured in the forms for a week, the slabs were picked up by a 10-ton truck crane, transported to the bridge and set in their final position on the pile bents, with a 10-in. space between them. Two ¾-in. reinforcing bars were inserted in this 10-in. space. Then, after the slabs were checked for alignment and grade, the space was filled with concrete, encasing the dowels protruding from the pile caps and the bars extending from the slabs. Since the slabs have grooved edges for keying to this concrete, the deck was thus unified and anchored to the bents.

Finally, handrail posts and curbs were cast in place.

• Fast work—Construction of the bridge started Feb. 19; the bridge was completed Aug. 24. Precasting of the deck slabs commenced May 29; the last one was positioned Aug. 6.

The structure was built by Cleary Bros. Construction Co. of West Palm Beach, Fla., under a $89,500 contract. Of this amount, about $33,400 was for the superstructure, $39,000 for the substructure and the rest for grading and incidentals. Work was under the direct supervision of J. H. Langford, general bridge superintendent. A. T. Langford was project superintendent; his personnel consisted of 1 operator, 1 mechanic, 6 skilled laborers, 4 semi-skilled laborers and 6 common laborers.

The bridge was designed by the Florida State Road Dept. under the supervision of W. E. Dean, engineer of bridges. H. D. Bondy was project engineer.



PINE FLAT DAM, rising in this California canyon will impound flood waters of the Kings River. Batch plant (right) produces air-cooled aggregate and ice-chilled mix. (All photos ENR Staff)

Fast cableway and cool mix at Pine Flat Dam

A NEWLY DEVELOPED, high-speed cableway that enables the contractor to pour more concrete faster is the outstanding feature of the construction plant at Pine Flat Dam.

And concrete cooling facilities are laid out to keep the temperature of the mix below 50 deg F in spite of high summer temperatures. The cooling works include no devices new to dam construction, but the equipment is assembled in a somewhat different fashion.

These features were developed by Pine Flat Contractors, a joint venture with Guy F. Atkinson Company as sponsoring firm. They hold a $24,339,776 contract to construct the 440-ft-high concrete gravity dam for the Corps of Engineers. Major purpose is to control floods on California's Kings River.

The height and mass (2,200,000 cu yd) make Pine Flat the highest and largest concrete dam built by the Corps of Engineers. It exceeds the 425-ft height of Mud Mountain Dam (rockfill and earthfill) and the concrete mass of Bull Shoals (2,100,000 cu yd), previous Corps of Engineers record holders.

General features of the dam were described in ENR Sept. 7, 1950, p 32.

• High-speed cableway—The newly developed cableway is capable of better than 2,000-fpm travel as compared with about 1,200 fpm for other cableway systems now in general use. Speed is possible because of (1) direct current power, (2) separate drives to permit simultaneous operation of hoist and haul and (3) revised haul cable rigging. An amplidyne control system assures more positive, smoother operation. Other electrical devices regulate safe movement of head and tail towers.

Actually there are two cableways at Pine Flat Dam, each rated at 25 tons capacity. One is a standard Lidgerwood rig and the other the new Willamette high-speed cableway. Both operate from one set of head tower and tail tower tracks, which are parallel, straight and 2,340 ft apart (dam crest length is 1,820 ft).

The standard cableway is used for moving forms and performing other service functions. The high-speed cableway is used almost exclusively for concrete placing. Each has 3½-in. dia track cables. Towers of each are similar in appearance, but there the similarity ends.

• New drive gearing—Most important reason for the faster speed on the new cableway is the drive and its gearing. Normally, cableways are powered by a single alternating current motor that is connected to both hoist and haul

TABLE I—PINE FLAT DAM FACTS

Type—Concrete gravity
Height—440 ft max
  Highest dam built by Corps of Engineers
  Second highest dam in California
  Eighth highest concrete dam in the world
Mass—2,200,000 cu yd
  Largest Corps of Engineers concrete dam
  Second largest California concrete dam
  Sixth largest concrete dam in the world
Thickness (max)—350 ft
Length—1,820 ft
Spillway—Six 42-ft-long by 38-ft-high radial gates with flip-bucket instead of stilling basin
Outlets—Ten 5x9 conduits
Reservoir—1,110,000 acre-ft

drum by a double set of gears. Under this setup, a clutch is located between each drum and its drive gear. With this arrangement simultaneous operation of haul and hoist is impractical.

The new cableway has separate motive power for the hoist drive drum and for the haul drive drum. Each drum is powered by two 250-hp motors, one located on each side of the drive gear, thus providing balanced torque. There are no intervening clutches. Two motors afford added operating safety since the particular drum involved can be powered by only one motor should the other fail (speed would be reduced, of course).

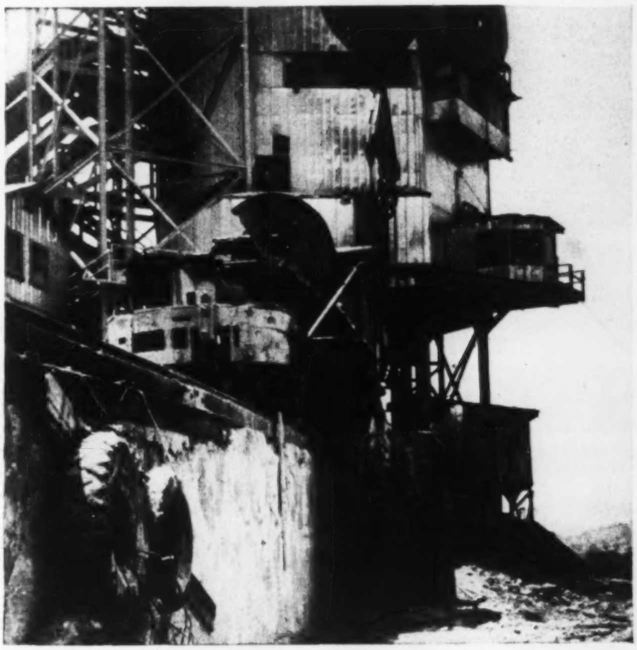
Separating the drive mechanisms for hoist and haul drums permits re-rigging of the haul drive for faster operation. Double-drum rigging is used but only one of the drums is powered; the other drum is an idler. Fast operation would be impossible without the new rigging.

The operator has two controls, one for hoist and one for haul. They are operated separately.

As compared with ac motors, the dc adjustable voltage drive motors are more responsive to control and provide smoother operation. This results in decreased cable maintenance and longer life in general.

Actually, the amplidyne control system is a major factor in smooth operation of the Pine Flat cableway. The amplidynes are simply small motors that develop current for excitation of coils on drive motors. By changing output of the amplidynes, coil voltage excitation is changed and thus operating speed is altered.

Each drive motor is provided with an electric brake, and each drive drum is provided with a mechanical band brake. The electric brake is applied automatically as the operator changes the controls to slow the movement. Then, as the particular motion involved is brought to a stop, the band brakes are automatically applied.



CONCRETE TRANSFER CAR empties its hopper to fill 8-cu yd bucket. Overturning dump action is aimed at eliminating segregation. Cableway operator in overhang on batch plant has full view of operations.

TABLE II—CONCRETE DATA—PINE FLAT DAM

	4-Cu Yd Batch Interior Mass Weight (lb)	*Typical Temperatures (Deg F)
Water:		
Ice	350	31
In sand	185	
Added as water	160	38
Cement	846	110
Sand (dry weight)	2980	79
Stone:		
#4¾"	2252	66
¾"-1½"	2800	63
1½"-3"	2984	51
3"-6"	4280	47

* To produce 47 F concrete when air temperature is 99 F

Additional braking power is afforded by the drive motors. Since there are no clutches and since the motors are dc, they act as generators when reversed. This regenerative braking pumps power back into the line and thus cuts down on power use. This helps to justify the additional amount of installed load.

• **More equipment required**—All this motive power is more expensive than required on standard cableways. In standard rigs, one 500-hp alternating current motor might do the entire job. In this new rig, two 1,000-hp motor-generator sets are required and four 250-hp (name plate) dc drive motors are involved. (The drive motors are actually operated at about 400 hp.) However, the contractor believes that additional initial expense is more than amply repaid by faster operation and more positive control.

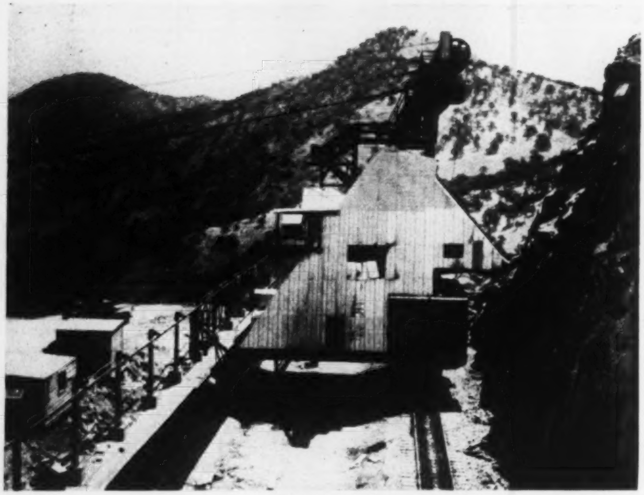
The operator for the high-speed cableway has his station in an enclosed platform sticking out from the batch plant. Here he is able to land the buckets for filling from transfer cars without the aid of signals. He also is able to control directly the spotting of buckets in the monoliths near the batch plant where his visibility is good. For distant work he is kept informed by telephone.

An alternate operator sits at a duplicate set of controls in the head tower. This operator also serves as the oiler for the cableway machinery. He takes over when the bucket is reeled all the way into the head tower for realignment of slack carriers or for such other operation as cannot be handled by the main operator in the batch plant.

• **"Bugs" about out**—Development of the new cableway has not been without its "bugs." For example, the high speed at which the main haul drive drum and its idler drum are operated has played havoc with drive shafts. After much trouble, a new shaft arrangement was installed that involves nesting of the shafts in roller bearings.

Much difficulty also was encountered in operation of the slack carrier device. This was designed to operate automatically without the attention of the operator. Its function is to support the load cable and prevent fouling. Most of these bugs have been or are being ironed out and it is hoped that the rig will operate satisfactorily for the long haul ahead.

By using speeds of only around 1,800 fpm, this one cableway,



STRAIGHT HEAD TOWER TRACK **and parallel tail tower track permit full coverage of dam. Picture was taken from high-speed cableway head tower and shows standard-speed cableway head tower. Electrical controls prevent collision of head towers, and other controls keep head tower and tail tower moving in synchronism.**

equipped with an 8-cu yd bucket, has placed a little over 4,000 cu yd in 24 hours (with the standard cableway performing service operations). This is maximum. Average on which the job progress is set up is 3,000 yd a day for distant blocks and 4,000 yd a day for blocks near the batch plant. During the high month so far (April), 80,694 cu yd was placed.

Other electrical controls are installed to guarantee safe movement of head and tail towers. One set keeps the towers travelling at the same speed. If they were to get out of line, undue stress would be induced on the main cable.

Another set of controls consists of photoelectric cells installed to prevent towers of the two cableway systems from colliding.

To sum all of this up, of prime importance in the high-speed cableway is separate and simultaneous operation of hoist and haul mechanisms. This permits re-rigging of the haul drum and that enables the cableway to be operated at the faster speeds. The direct current motive power, together with the amplidyne controls, permit taking advantage of this high-speed rigging for faster operation.

• Concrete cooling—The Pine Flat Dam concrete cooling facilities include (1) air cooled stone, (2) screw-conveyor heat-exchanger cooled cement, (3) addition of ice and/or refrigerated water for concrete mixing. Sand is not cooled except for the natural cooling afforded by evaporation of water used in the sand classifying process.

None of these cooling methods is unique or new. Cold air cooling has been used at Harlan County Dam. Screw-conveyor, heat-exchanger cement cooling is used at Detroit Dam. Addition of ice to the mix has been used at many places including Davis and McNary dams (in fact, some of the same ice making machinery that is now installed at Pine Flat was used on the north shore contract at McNary).

But at Pine Flat the degree of cooling required is probably as great as at any previous dam. Summer temperatures are regularly over 100 deg. F. This makes cooling more of a problem and has resulted in using these three cooling methods. At McNary, for instance, the required cooling was achieved merely by addition of ice. At Detroit Dam, the required cooling was achieved entirely by refrigerating aggregate, sand and cement, but with no ice addition in the mix along with the water.

It all hasn't been easy. The contractor found on a few days in early summer that the resultant mix was pushing the 50 deg. F. limit. On some occasions operations were on a reduced output basis or stopped entirely to let the refrigeration plant catch up with the required temperature. Additional cement cooling facilities have been added above those originally planned. However, that is primarily because the cement is received at a much higher temperature than was expected.

• Cement cooling—Cement is brought to the job in hopper-bottom, truck-trailer units and dumped into a bunker. Cement-screw and elevator move it to the first of two silos. A screw-conveyor cooler takes cement from the bottom of the first silo, and after one pass the material is elevated to the top of a second silo.

Another screw-conveyor cooler continuously recirculates cement from the bottom back to the top of the second silo. Cement is drawn from the bottom of the second silo as needed and air-flowed to the batch plant. Cold water for the screw-conveyor heat-exchangers originally came from the batch plant. However, when it was found that cement came to the job at 160 to 200 deg F instead of the planned 150 F, using refrigerated water became too much of a drain on the refrigeration plant. For that reason, the contractor installed a water cooling tower at the cement silos. Air cooling of water is quite satisfactory since good results are achieved by reducing the cement temperature to around 110 deg F.

To further improve cement cooling, the contractor in mid-summer installed a third screw-conveyor that could be used on either silo as needed.

• Aggregate cooling—Air for aggregate cooling is pumped by fans through cold water sprays with water temperature maintained at 34 deg F. From there, the air passes through large ducts to the aggregate bins. Three ducts are 36-in. dia and the fourth is 42-in. dia (for 6-in. max rock). The air passes upward through the rock, is gathered in a large chamber at the top and returned in an 84-in. pipe to the cooling room.

The entire cooling plant is heavily insulated and is also covered with aluminum foil for heat reflection.

Water for air cooling and for adding to the mix is cooled in a tank through which coils of refrigerant pass. This refrigerant comes from four ammonia compressors having a total capacity of 398 tons per day.

Water for the ice machines comes from four other ammonia compressors having a capacity of 332 tons per day. Cool water is used to make ice since this speeds up the process and gives greater ice output.

• Aggregate production—Raw aggregate is produced from natural river gravel in a bar 6 miles downstream from the dam. An electric shovel with a 5-cu yd bucket dumps gravel in rail cars operating on a figure eight

(*Continued on page 43*)

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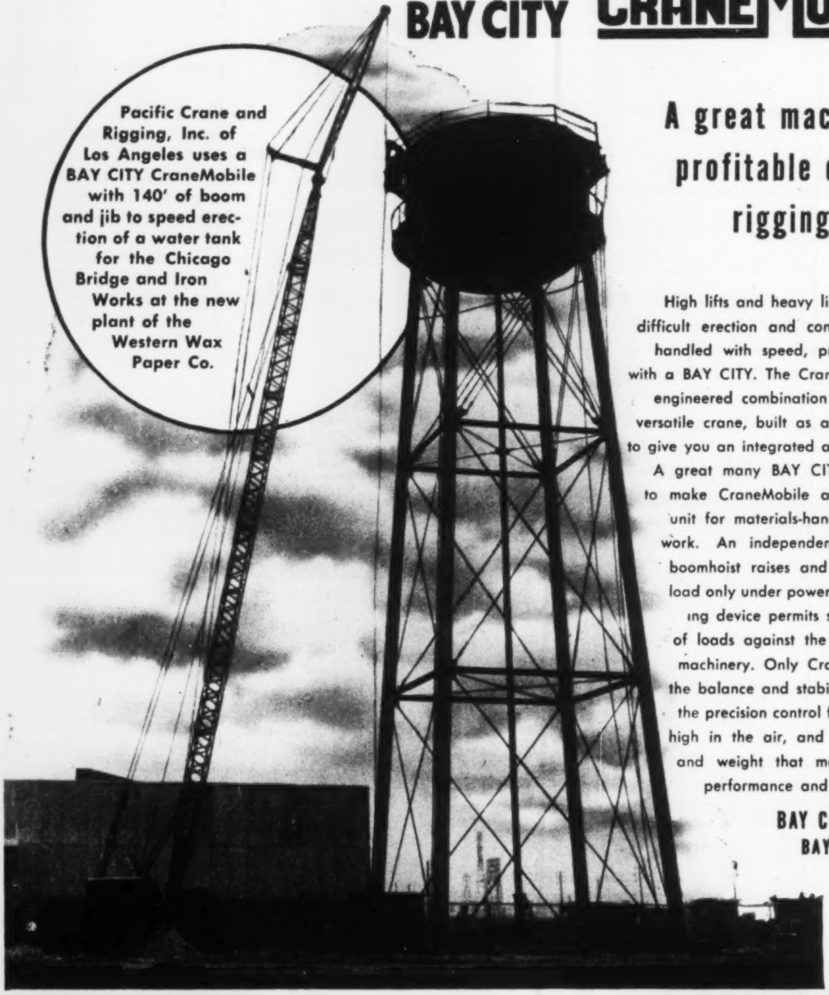

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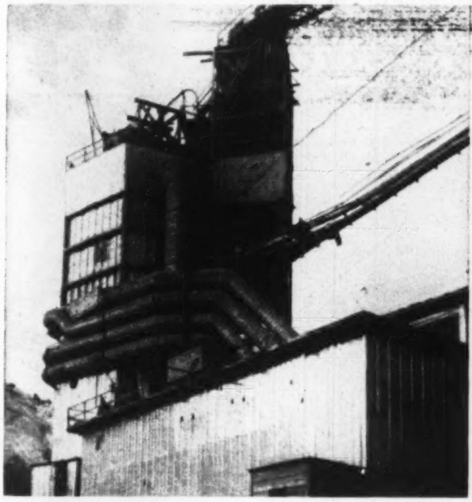
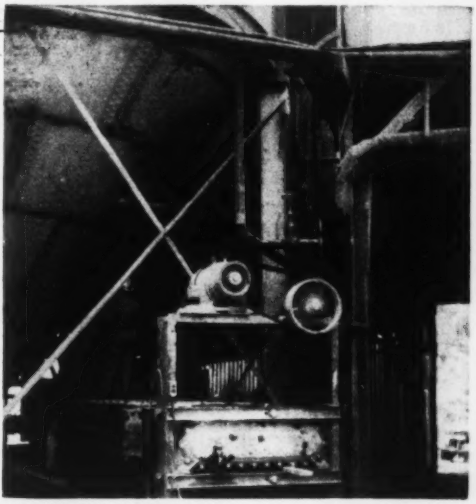
Fast Cableway and Cool Mix at Pine Flat Dam

(Continued from page 40)



AGGREGATE COOLING is accomplished at batch plant by blowing cold air through storage bins. Four cold air ducts, one for each size gravel, lead from refrigeration plant to bins. Rescreen tower in the background is on separate structure to minimize vibrations in batch plant.



SCREW CONVEYOR in heat exchanger takes material from bottom of silo for cooling. Cement is then moved by air slide to second silo where additional cooling is accomplished by similar machine. A third cooler added during summer can be used on material from either bin as needed.

track. The cars dump in bunkers at the intersection of the figure eight track. Then the material is hoisted to a raw aggregate plant.

Material above 7-in. size is scalped out and the remainder is separated into sand and gravel. This sand and gravel is rail hauled separately to the finish aggregate plant located about a half mile below the dam-site.

• **Transfer car**—One feature of the concrete production that is slightly unusual is a transfer car used for taking concrete from the batch plant to the bucket suspended from the cableway. This transfer car has two 4-cu yd hoppers. It is so arranged that the hoppers can tip over to dump into the buckets. This tipping is designed to counteract any tendency of the mix to segregate in the transfer car. Using this device eliminates the necessity of hooking and unhooking buckets and thus saves time in the concrete work.

• **Flood damage**—Considerable delay was encountered as result of a flood last November. The Kings River rose to well over 100,000 cfs, whereas normal peak flow at that time is below 15,000 cfs. This flood completely over-topped the cofferdam and work in process in the bottom of the canyon. It also inundated the aggregate facilities, ripping up a large part of the rail line in the aggregate pit. A $200,000 reinforced concrete bridge built by the Corps of Engineers under an earlier contract also was wrecked.

• **How the job fits in**—The Kings River crosses the heart of the Bureau of Reclamation Central Valley project. Yet, none of the Kings River land has been included in the Central Valley project. That's because substantial water is available from this stream for irrigation purposes, and large quantities of supplemental water are not needed.

However, there has been much conflict in the past over Pine Flat Dam. Both the Bureau of Reclamation and the Corps of Engineers wanted to build the project. The Corps of Engineers won out because it is primarily a flood control job. But even after money was appropriated, the President withheld funds for an entire year.

Some irrigation benefits will be developed by the project. That's because the dam can be used to store water toward the end of the flood season. This water can be released for downstream agricultural use.

Three penstocks are being installed through the dam for later installation of a powerhouse. However, the Federal Power Commission has made no decision as to who should build and operate the power facilities. The Bureau of Reclamation is in the picture, and an application has also been made by the Kings River Water Conservation District, a California state agency. Judging from recent precedents in California, it seems unlikely that the Corps of Engineers will be authorized to build the powerhouse. Yet it's not impossible that precedent might be upset. Nor is it entirely impossible that the Pacific Gas and Electric Co. might get to do the work.

• **Credits**—Pine Flat Dam is a project of the Sacramento District, Corps of Engineers, for which Col. C. C. Haug is district engineer. R. B. Jenkinson is resident engineer at the dam.

Earl M. Jennett is project manager for Pine Flat Contractors. George H. Archibold is project superintendent and Guy Heimsoth is assistant project manager. The new cableway was built by Willamette Iron & Steel Co., Portland, Ore. Electrical equipment was supplied by the General Electric Co.

The joint venture holding the $24,339,776 contract for construction includes, besides the sponsoring firm, the following: Bressi & Bevanda Constructors, Inc., Chas. L. Harney, Inc., J. A. Jones Construction Co., and A. Teichert & Sons, Inc.

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Price fix favors fluoridation's future

On a new price ceiling—more than on any other single factor—hangs the answer to a vital question: How soon will the proved tooth protective possibilities of fluoridation be made available to all children?

Raising ceiling prices for sodium silicofluoride on August 28, the Office of Price Stabilization removed another obstacle from the path of the fast-rolling fluoridation movement, which already has engulfed more than 200 U. S. cities (ENR Sept. 20, p. 27).

Increasing numbers of fluoridation programs had waterworks men, many of whose cities were actively interested, concerned lest existing chemical output would pinch progress. And well it might have.

But now, with the ceiling raised from a non-profitable 5¢ per pound to an attractive 7¢, chemical producers of phosphate salt and fertilizer will look with renewed interest upon their plentiful by-product, sodium silicofluoride, which still is the cheapest per pound of the fluoride compounds.

• **Looking up** – The tight situation should ease. Sodium silicofluoride should assume a favorable competitive position with sodium fluoride, now commercially available in relatively large quantity at 11¢ per pound. There will be no mad scramble among the phosphate producers for the sodium silicofluoride business, but as demand grows they'll do the retooling necessary to produce enough of the now favorably (for them) priced compound to go around. It has been estimated that 35,000 tons per year of it would fluoridate all the water supplies in the country. (U. S. Public Health Service figures 20 lb. of sodiumfluoride or 14 lb of sodium silicofluoride will add 1 ppm fluoride to 1 mgd of water.)

Meanhile, there is research to be done before sodium silicofluoride will be as acceptable to all waterworks, dental and public health personnel as sodiumfluoride is today. Clinical and experimental evidence on the effectiveness of other fluoride compounds lags behind that available on sodiumfluoride. Investigators at Indiana University, who have been in fluorine research for six years, advocate that no compound other than sodium fluoride should be used, except on an expressed experimental basis, until data are available proving it equal or superior to NaF. (Wisconsin's dental director has come out flatly against use of hydrofluoric acid.)

But despite understandable reticence of some, many others appear convinced that all fluorides will produce the same results: any commercially available fluoride will ionize in dilute solution and perform the desirable ionic reaction with tooth enamel.

Few, if any, health aids have had as thorough an investigation prior to use as has fluoridation. Few future practitioners should be expected to shy from the soon-to-be plentiful sodium silicofluoride for the want of further proof that it is harmless. There exists no proof that it is harmful in the concentrations used, authorities say.

• **Equipment aplenty**—The chemical picture—picked up by its shot-in-the-arm price ruling—is now as rosy as the equipment situation. Producers can make all the market can demand.

Of course, if every city in the U. S. not now in the act switched to fluoridation tomorrow there woud be a strain, and some waits for equipment. But, at the present rate of 10 to 20 cities entering the fold each month, the manufacturers are not pressed. One manufacturer estimates that all 15,000, or so, waterworks in the country could be equipped for fluoridation within one and one-half to two years, given a break on material availability. But the same man foresees no such rate of nationwide acceptance; feels the present sustained movement toward fluoridation will take maybe five years to peter out.

Answers: straight from the suppliers

(An ENR Research Report)

From five top-ranking chemical suppliers comes this concencus: Potentially, there are enough fluorides to take care of a far greater demand than now exists for fluoridation; but actually the market has been in tight supply. The rate of profit experienced by chemical firms was leveled by ceilings too low to stimulate increased production. Firms are not prospecting for new customers—they are only trying to supply existing accounts.

This is what four of the firms say:

Blockson Chemical Co.: "As time goes on and the price of sodium silicofluoride (attracts producers) there will be sufficient production to handle the basic fluoridation program."

The Davison Chemical Corp.: "While we are trying to take care of old customers, we could give no encouragement at all to new users at the present time."

Aluminum Company of America: "At the present time sodium fluoride is in fairly tight supply due primarily

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Aluminum Company of America
Sodium Fluoride: In 375-lb drums
Grades: 90-93% white—$.11 /lb
96-98% white— .1125/lb
96-98% blue — .1175/lb

U. S. Phosphoric Products
Sodium Silicofluoride only: (See new ceiling price list)

Davison Chemical Corp.
Hydrofluosilicic Acid: In 550-lb net, returnable rubber-lined containers
Grade: 30%—$.05/lb

Blockson Chemical Corp.
Sodium fluoride:
In 100-lb bags $.1105/lb
In 375-lb drums .1125/lb
Grades: White powder 99% and 97%
White crystal 100%
Nile blue powder 99% and 97%

Pennsylvania Salt Manufacturing Co.
Hydrofluoric Acid:
aqueous —$13.40/cwt*
anhydrous— 18.00/cwt*
(*70% strength car-load lots)
Aqueous comes in cylinders:
165, 450 & 900-lb
tank cars: 30 tons

Anhydrous comes in cylinders:
6, 25, 100 & 230 lb
tank cars: 11½, 22 & 41 tons

to a shortage of sulphuric acid and somewhat heavier demand than has existed previously. . . There will be little improvement during the next several months. . . Phosphate processers can now afford to recover the fluorine and produce ample supplies for all needs by those water departments in the country interested in fluoridation."

Pennsylvania Salt Mfg. Co.: ". . . are experimenting with sodium bifluoride as a dry feed product . . . still in test stage—not released yet for commercial use."

Accompanying tables give the new ceiling price information for sodium silicofluoride and also list current prices at which the above chemical manufacturers offer other fluoride compounds. There are other chemical suppliers not listed, of course.

• **Concensus on equipment** — Ten prominent producers of fluoridation equipment unanimously agreed: There is no shortage; orders can be filled as requested.

Gleaned from the statements and literature of manufacturers queried are the following factors pertinent to the waterworks man faced with purchase of fluoridation equipment:

Deliveries: Time for shipment ranges up to 24 weeks for one manufacturer, six and less for others.

Costs: For treating 1 mgd and up, gravimetric dry feeders cost about $3,000 to $4,800, depending on dust control features. Volumetric feeders go roughly $900 to $2,500 in price—again varying with dust collection equipment. Solution feeders are available at $800 to $1,200. Small solution type feeders are available for as little as $300. and dry feed equipment can be had for under $200—but with relatively small capacities, of course.

NEW CEILING ON SODIUM SILICOFLUORIDE

Carload or truckload lots, fob plant:	
100-lb. bags	$.07/lb
350-lb bbl	.07
125-lb drums	.08
LCL or LTL lots, fob plant:	
100-lb bags	$.075/lb
350-lb bbl	.079
125-lb drums	.089

Recommendations: Get a feeder with a hopper that holds at least one full container of chemical; this lessens the handling problem. Look for dustless filling. Low height for easy filling is desirable. Accuracy is paramount. Seek simplicity of mechanism for easy lubrication and repair. Get wide range, but simple feed adjustment. Buy the right feed for the chemical proposed for use. Dry feed is generally better for over 2-mgd flow.

Suppliers who responded to ENR's questionnaire on feeder equipment availablilities include: Graver Water Conditioner Co., B. F. Gump Co., Hills-McCanna Co., Infilco Inc., Jeffrey Manufacturing Co., Omega Machine Co., Permutit Co., % Proportioneers % Inc., Milton Roy Co., Shriver & Co., and Wallace & Tiernan Co., Inc.

Artificial rainmaking experiments continue over ever-widening areas

Radio-controlled cloud seeders planned; increased hydroelectric power through greater water runoff seen for Pacific Northwest

Gov. Earl Warren of California has signed a measure whereby the state will regulate and license artificial rainmaking operations. The legislature also appropriated $50,000 for research in the production and control of rainfall—through public and private organizations.

Regulation of rainmaking activities will be by the state engineer and licensees are required to keep records of their operations and file reports. The law sets up a procedure of public notice in the county where the work is to be carried on. Weekly notices for three consecutive weeks will be required in a newspaper having general circulation in the county. But the state engineer can grant emergency permits—without normal notice being necessary—to aid in extinguishing fires.

• **Remote control**—One set of rainmakers, the Santa Ana River Weather Corp., plans to install radio-controlled silver iodide generators at 18 key stations to take advantage of storm conditions in a rainmaking program for next fall and winter. Generators would be controlled from a central broadcasting installation. The firm conducted cloud-seeding experiments near San Bernardino last winter.

John A. Battle, meteorologist for the corporation, in replying to comments that it is ridiculous to try to control floods and then spend money to create more rain, said, "It is entirely possible to curtail effects of thunderstorms or storm fronts." But he also explained that techniques are not advanced far enough for rainstorms to be turned on or off at will.

• **For large stakes**—Meanwhile, Bonneville Power Administration is planning a survey of cloud seeding possibilities to maintain Pacific Northwest hydroelectric reservoirs at higher levels.

Bonneville has signed a $7,500 contract with Water Resources Development Corp., Denver, to make investigations during August and September. If found feasible, rainmaking operations will be scheduled to increase runoff from September through March. The survey will cover the Pend Oreille, Clark Fork and Flathead River drainage basins of the Upper Columbia.

Power resources of about 360,000 kw can be added, if winter flow of the Columbia River at Grand Coulee Dam can be maintained at average or better, according to Bonneville Administrator Paul J. Raver. He estimates that this gain would represent about two-thirds of the total generation at Bonneville Dam.

Low water conditions on the Columbia during the coming winter could result in a power deficit of about 600,000 kw in the Pacific Northwest, Raver said.

• **Operators cleared**—F. W. Reichelderfer, chief of the U. S. Weather Bureau, states that no evidence exists showing rainmaking activities had anything to do with the recent mid-Western floods. He says that the air masses responsible came from the North Pacific Ocean and the Gulf of Mexico. This statement is in answer to comments by persons inclined to blame the cloud seeders for abnormal precipitation.

Water Resources Development Corp., a recent target for those who complained about unprecedented snows in the Rocky Mountains (ENR July 5, p. 26), has lashed back at critics who have indicated that the firm may be responsible for not only floods in Kansas and Missouri but also the severe drouth in New Mexico.

The company, said to be the country's largest rainmaking concern, announces that it plans legal action against "individuals making unfounded statements."

READER COMMENT

Early hollow piles

Sir: In the article, "First prestressed piles carry tank platform" (ENR July 5, 1951, p 38) it is stated that prestressing made a new type of pile possible. The accompanying photo shows one of a group of similar hollow piles, non-prestressed and much more economical, which I manufactured for the Harbor Board of San Francisco in 1907 in my plant in Alameda, California. The piles were about 24-in. in dia. and generally 30 to 40 ft long, of 1:1:2 concrete. Various government agencies reported that these hollow piles did not show a sign of deterioration while the decks of the piers were affected by the salt spray. Of course, they did not know that such very rich concrete was used.

HOLLOW concrete pile, 1907.

The photo shows a hollow pile 60 ft long balanced on a piece of steel 1 in. square and about 1 ft long, certainly a remarkable test. In the background, to the left, are shown some of the first precast solid piles manufactured in this country. They were used for the foundation of the first steam turbines erected by the Pacific Gas & Electric Co.

L. J. Mensch
Evanston, Ill.

Really a record?

Sir: In the Sept. 6 issue of ENR (p. 42) was an article describing erratic soil conditions encountered at Meadville, Pa., and the various pile lengths resulting from these conditions.

Perhaps the explanation for some of the long lengths required, is failure of the splice and, consequently, separation of the pile underground into two sections. If this did occur, the effective pile length would be equal to the top section length alone. Therefore, the effective penetration would be reduced, the blow count would be low, and since the pile tip would be located in softer, upper soil, additional pile lengths would be required to attain satisfactory resistance.

Applying the above line of reasoning, let us assume that the bottom two 65-ft sections of the 304-ft "record" pile separated at the splice. The effective pile length would be 304 ft less 130 ft or 174 ft. This length of 174 ft corresponds to the top of the medium gray sand layer shown in the right hand boring. At this depth the density is increasing and, therefore, a blow count of 30 was obtained. If this particular pile were driven a few additional feet to the sand and gravel layer, the required 42 blows per foot would have been obtained.

In the article it was mentioned that the nearest to 304 ft was a 246-ft pile. In this case let us assume that only the first 65 ft length separated from the main pile. The effective length is then 246 ft, less 65 ft,—or 181 ft. Note that this length corresponds exactly to the top of the cemented sand, gravel and clay stratum of the left hand boring.

Stephen M. Olko
Manhasset, N. Y.

Correction: In the left hand boring drawing of this article 78′, 81′ and 86′, should read 178′, 181′ and 186′. In the right hand boring, the two indicated elevations of 10′ and 19′ are wrong—Editor.

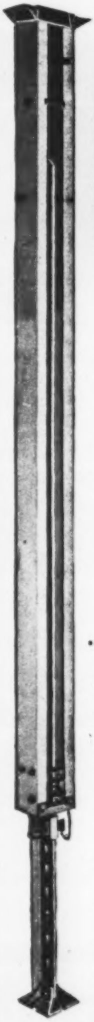
Misuse of manpower

Sir: I was very interested in ENR, July 12, 1951, editorial "Shortages of professional men". No wonder there is.

Myself, I'm in the Naval Reserve, recalled to active duty, serving as a radioman third class, with a degree in civil engineering from the University of Denver. At the time I was called back to active duty I was employed by American Bridge Co., Ambridge, Pa., with only three month's experience under my belt after graduation.

I realize that these things do not exactly make me a professional man, but certainly a guy is entitled to a break. Some consideration should be given to future engineering grads when called by reserves. Certainly an empty period of a couple of years is going to ruin some of them, thus create a "shortage of professional men."

Harold W. Gilley, RMN3
San Diego, Calif.



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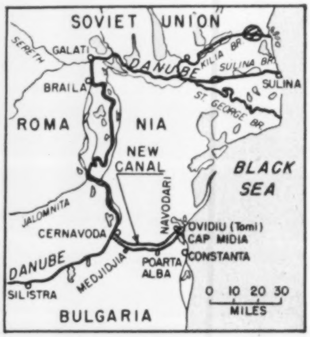
FOREIGN

Work started on canal from Danube to Black Sea



Behind the Iron Curtain construction is under way on a 36-mile Danube-to-the-Black Sea canal that will shorten this important inland waterway some 230 miles.

At the southern Rumanian town of Cernavoda, the Danube is only 30 miles from the Black Sea, but the natural river course is 220 miles northward to the threefold delta. The difference in water level between the flooded Danube and the sea is 36 ft, but the plain of Dobrudsa rises to an elevation of 150 to 200 ft between Cernavoda and the seaport town of Constanza.

The first proposal for the Cernavoda-Constanza canal was made by the Hungarian civil engineer Samuel Hajos in 1917 after the separate peace of Rumania with the Central Powers (Germany and Austria-Hungary) in World War I. The main difficulty of the project was the height of the elevated plain of Dobrudsa. The project of Mr. Hajos, promoted by the Hungarian River and Water Direction, provided a straight level canal section with entrance and exit locks at the Danube and at the sea, and with a 10-mile long canal tunnel below the highest section. This project was lost in the general poverty and political disunity of the Balkan countries after World War I.

- **The new project**—The project now under way provides an open cut canal, since below the loess cover of the elevated plain of Dobrudsa there is a Sarmatian limestone with interlaminated marl and clay layers, a geological formation that allows cuts even to 200 ft depth. The 36-ft difference in water levels at river flood will be controlled by two locks. Water for the usual losses of the canal can be supplied from the Danube by pumping operations.

Some 65,000,000 cu yd of earth and rock excavation are required for the canal, which will be 200 ft wide and 20 to 26 ft deep. It will accommodate ships up to 5,000 tons. Considerable improvement in health conditions is expected from drainage into the canal of a swamp area where a third of the inhabitants have malaria.

The new canal starts from the Danube at Cernavoda, about 190 miles from the delta at Sulina and north from the railroad line to Constanza and follows this in the valley of the small river Carasu up to the town Medjidia. The canal turns northeast at the village of Poarta Alba and meets the Black Sea at Navodari, 19 miles north from Constanza.

It is intended by the Rumanian Government to develop Port Navodari (where the canal meets the Black Sea) to even larger size than Constanza, which had a yearly traffic volume of over 4,000,000 tons before World War II.

About 30,000 men and women are employed on the project, which was expected to be completed in 1955 but already is behind schedule.

MOSCOW
GORKY
MOLOTOV
STALINGRAD
Azov Sea
Black Sea
Caspian Sea
Aral Sea
KRASNOVODSK
RESERVOIRS
SHELTER BELTS
CANALS

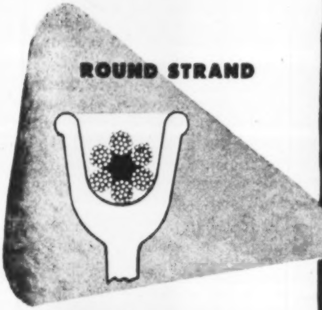
BEHIND THE IRON CURTAIN—This picture, put out officially, is a chart of current construction undertakings in the Soviet Union—Sovfoto.

Foreign briefs

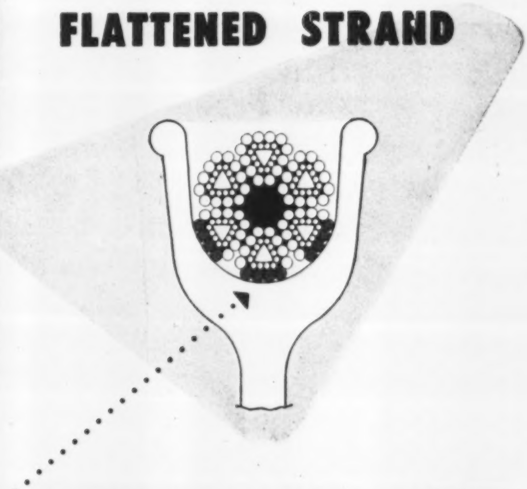
- **Coast to coast pipeline**—The first trial of the new 160-mile trans-isthmian pipeline at Tehuantepec in Mexico took place on Sept. 15. It connects the Pemex refinery on the Gulf of Mexico at Minatitlan, Vera Cruz, with the port of Salinas Cruz on the Pacific. Gasoline and light oil will be pumped through the 10-in. line and stored in Salinas Cruz for loading on Pacific coast tankers.

- **Sao Paulo Hotel**—Sao Paulo, Brazil, is to be the site of the latest addition to the chain of overseas hotels operated by Inter-Continental Hotels Corp. Design and construction will be supervised by Holabird, Root and Burge of Chicago in combination with the Sao Paulo architect-engineers Henrique Mindlin and Francisco Prestes Maia. Designs will be based on 600-room capacity.

- **Caracas-La Guaira Highway**—Completion of the 16-kilometer express highway from the Port of La Guaira to Caracas, capital of Venezuela, is expected by 1953, in time for the Pan American Conference to be held in Caracas that year, the Venezuelan Minister of Public Works, Gerardo Sanson, has announced. When the highway is opened travel time between the capital and the port will be cut from the present 60 minutes to 15 minutes. Starting at sea level, the road climbs to more than 900 meters before coming into the Caracas valley. At some places it runs along mountain slopes, goes through mountains and crosses deep ravines. All preliminary work has been finished and construction has been speeded up to a 24-hour-a-day schedule. The highway, started in January, 1950, will have two separate lanes approximately 6.4 meters wide each, with a median zone one meter wide between the lanes.



FLATTENED STRAND



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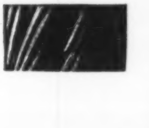
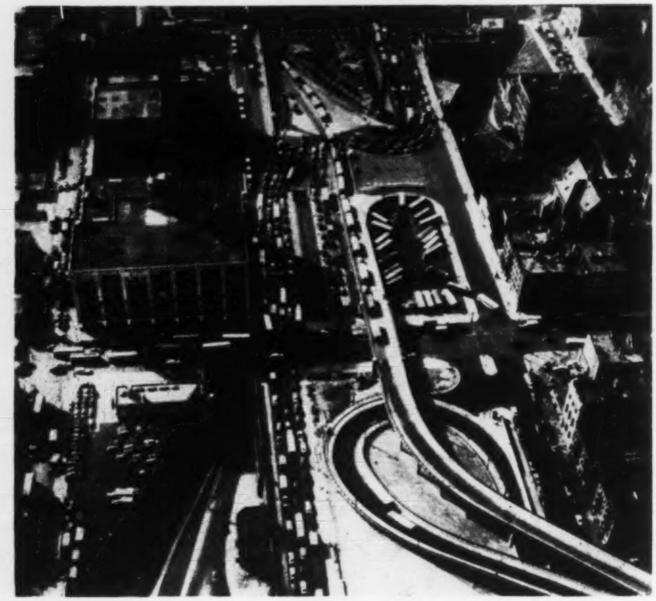


MUNICIPAL



IS A 3RD TUNNEL NEEDED?—This view presents the Port of New York Authority's strong argument in favor of adding a third tube to the Lincoln Tunnel under the Hudson River. It shows a typical backup of New Jersey-bound vehicles at 5 P.M. In the foreground are approaches from W. 39th St., 10th Ave., and the Port Authority bus terminal ramp. In the background is the approach from 11th Ave. via W. 40th St. In the meantime, the City Planning Commission has made an adverse report on this proposal (ENR Sept. 20, page 24). Construction Coordinator Robert Moses believes that there are yet no adequate plans to handle the greatly increased traffic on New York City streets which would result with the opening of another tube of the tunnel. However, as probably it would take five years to build the additional tunnel, proponents are confident that a suitable plan for handling traffic can be evolved.

Many parking plans are being considered

Parking, the perennial municipal problem, is in the news this week in at least five widely-separated communities, as follows:

- **Pittsburgh, Pa.**—Management and financing agreements have been concluded for the first two reinforced concrete garages planned by the Pittsburgh Parking Authority which has completed a contract with the Parking Service Corp. for management of the two garages on Fourth and Sixth Aves. Also completed is an agreement with the First Boston Corp. to handle sale of $6,000,000 worth of three and one-half percent, 30-year bonds to finance the project. Actual construction is expected to start this fall.

The $6,000,000 will cover cost of land acquisition for four sites (two in addition to the ones where the building program will be initiated) construction, design and operating capital.

As soon as the sale of the bonds is sufficiently advanced, the general contract will be awarded to a combine of low bidders, Crump, Inc. of Pittsburgh; James McHugh Co., Chicago, and Wilcox Construction Co., New York City.

Under terms of the management agreement, the authority will receive a minimum guaranteed rental of $332,000 a year. This will be sufficient to retire the bonds.

Both garage buildings will be of full ramp construction with a total capacity of 1,594 cars. The Fourth Ave. building will be 154 by 252 ft with a total floor area of 231,534 sq ft on a basement, four floors and roof. Its capacity will be 818 cars. The Sixth Avenue Building will have six floors and a roof, no basement, with total area of 231,182 sq ft and capacity for 776 cars.

- **Indianapolis, Ind.**—The off-street Parking Commission is studying a $3,500,000 program to meet the city's needs in the next ten years. It includes construction of two additional parking garages and three open-air parking lots.

The parking program was recommended by the Ramp Building Corp. New York, planning consultants, and points out that the city is now short nearly 11,000 parking spaces in the downtown area, a shortage which will increase by 20 percent by 1961, based on the expected increase in population and vehicles.

Lots recommended for purchase in the downtown area would provide 851 additional parking spaces. It was estimated it would cost $1,671,000 to buy and maintain three outdoor parking lots. Meanwhile, the commission is also considering development of a civic center on the site of the City Market, which would have two underground parking levels to handle 750 automobiles, a street level market and exhibition space, and a second-story theater and music hall, capable of seating 2,600. A stage, 50x160 ft would be built between the theater and music hall, forming an arena with seats for 8,450, including the third floor balcony. Such a structure, 420x225 ft in size, would be financed by a revenue bond issue, but estimated cost has not been announced.

- **Tampa, Fla.**—Workmen have begun clearing a downtown site for a 7-story concrete and steel parking garage planned as a private enterprise. Construction of the $750,000 garage is being backed by Park-N-Shop, Inc., a corporation in which stock is held by a large number of business men and citizens, with J. L. Cone, Tampa contractor, as president. Mr. Cone says the Atlantic Coast Line R.R. has accepted stock in the corporation in exchange for the title to the site at Tampa and Polk Sts.

- **Vancouver, B. C.**—Parking facilities will be provided for 250 cars below level at the north end of the new $11.5 million Granville Street Bridge.

Inclusion of the parking lot in the bridge plans has been formally approved by the civic board of works.

The parking lot will be situated inside the cloverleaf below bridge level and will have feeder streets on to bridge approaches. The southend cloverleaf will be developed as an ornamental area.

Construction work on the bridge is currently being held up pending result of a court action launched by the city

(Continued on next page)

against a Granville Island firm, Wright's Canadian Ropes, which is opposing plans to put one of the bridge piers through its building.

• **Philadelphia, Pa.**—The parking authority says that some of its plans are being thwarted by private interests which have beaten it to the purchase of several tracts the authority wanted to develop for off-street parking.

Councilman George Maxman, a member of the authority and the Philadelphia Highway Traffic Board, told the latter organization that competition is now a real problem confronting municipal parking development.

He said that private operators have in the last year built a number of off-street parking places in the central area that are capable of handling several thousand cars. He said this has been a distinct benefit to the city, but in some cases it has resulted in the authority being unable to carry out its plans for large units because part of the land was acquired by private interests.

Under the law the authority has the power to condemn land for parking places only when it is not so used by private owners. "Because of this limitation," said Maxman, "private operators have been able to acquire a tract of land and build a small garage on a site where the parking authority was planning to build a large one."

The answer, Maxman said, is to conduct preliminary studies secretly and acquire the land before private concerns learn what is going on.

Movement is started for a Bay Area Authority

California Assemblyman Richard Dolwig says he may ask Governor Earl Warren to call a special session of the legislature next year to do something about solving San Francisco Bay Area water and transportation problems.

Dolwig, a resident of South San Francisco, is chairman of a legislative subcommittee studying bay area problems.

If the session is called, the question would be the creation of a Bay Area Authority, Dolwig said, which could deal directly with state and federal governments on working out a cooperative program to reach a solution on such problems as a southern bay crossing, rapid transit, a fresh water lake in the bay, tidelands and air and water pollution.

The legislature holds a session next March but the meeting will be limited to budget and tax matters unless the governor opens it to other subjects.

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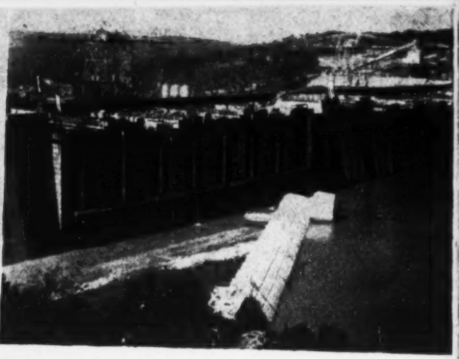

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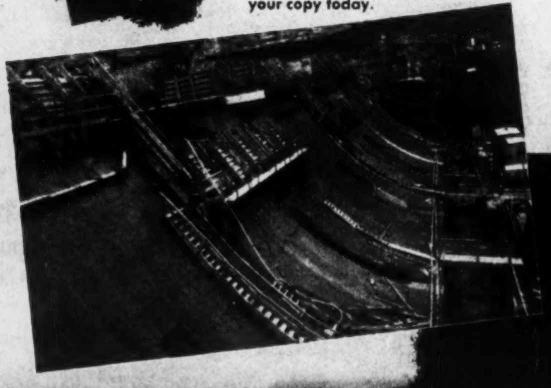

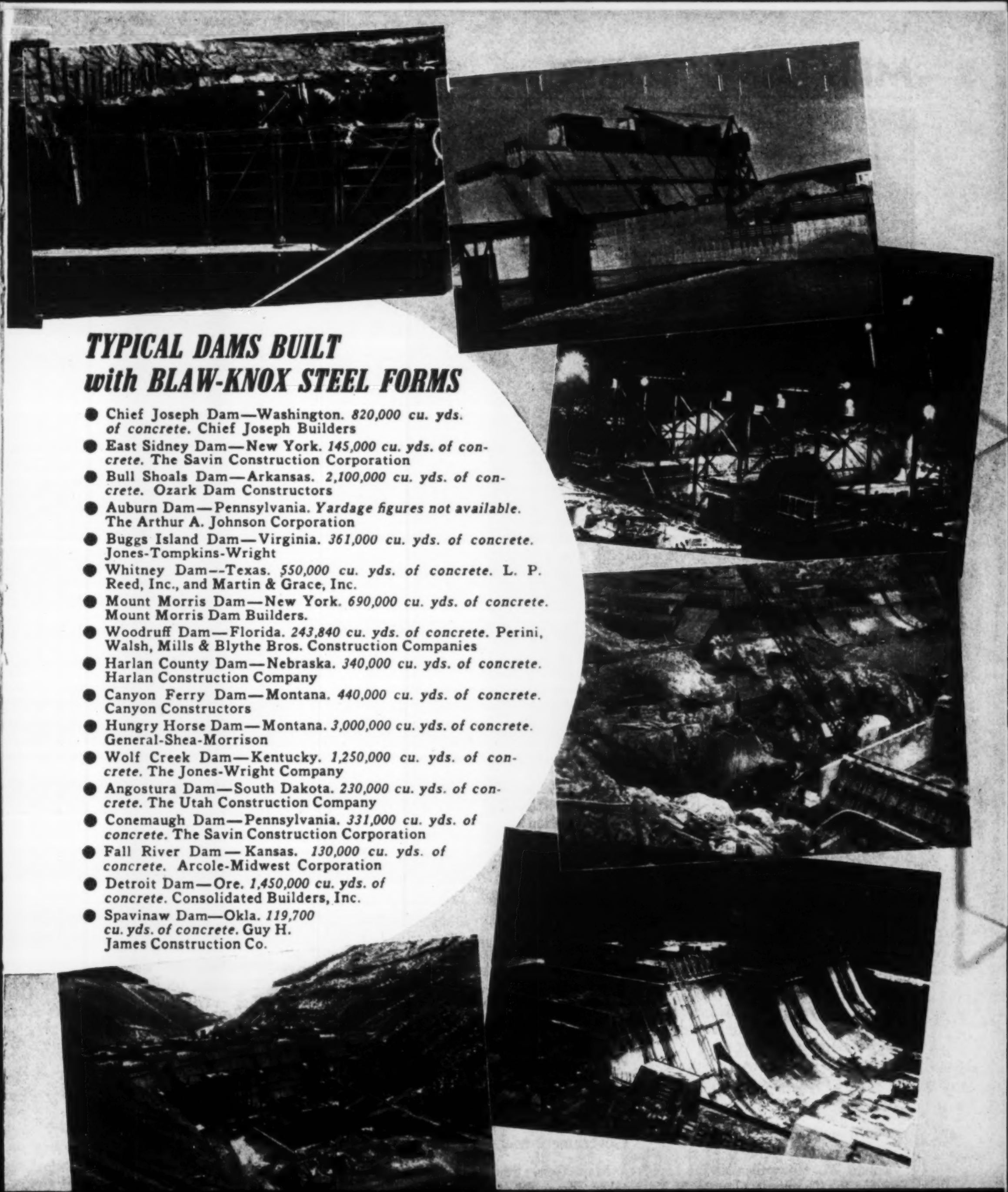

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- East Sidney Dam—New York. *145,000 cu. yds. of concrete.* The Savin Construction Corporation
- Bull Shoals Dam—Arkansas. *2,100,000 cu. yds. of concrete.* Ozark Dam Constructors
- Auburn Dam—Pennsylvania. *Yardage figures not available.* The Arthur A. Johnson Corporation
- Buggs Island Dam—Virginia. *361,000 cu. yds. of concrete.* Jones-Tompkins-Wright
- Whitney Dam--Texas. *550,000 cu. yds. of concrete.* L. P. Reed, Inc., and Martin & Grace, Inc.
- Mount Morris Dam—New York. *690,000 cu. yds. of concrete.* Mount Morris Dam Builders.
- Woodruff Dam—Florida. *243,840 cu. yds. of concrete.* Perini, Walsh, Mills & Blythe Bros. Construction Companies
- Harlan County Dam—Nebraska. *340,000 cu. yds. of concrete.* Harlan Construction Company
- Canyon Ferry Dam—Montana. *440,000 cu. yds. of concrete.* Canyon Constructors
- Hungry Horse Dam—Montana. *3,000,000 cu. yds. of concrete.* General-Shea-Morrison
- Wolf Creek Dam—Kentucky. *1,250,000 cu. yds. of concrete.* The Jones-Wright Company
- Angostura Dam—South Dakota. *230,000 cu. yds. of concrete.* The Utah Construction Company
- Conemaugh Dam—Pennsylvania. *331,000 cu. yds. of concrete.* The Savin Construction Corporation
- Fall River Dam — Kansas. *130,000 cu. yds. of concrete.* Arcole-Midwest Corporation
- Detroit Dam—Ore. *1,450,000 cu. yds. of concrete.* Consolidated Builders, Inc.
- Spavinaw Dam—Okla. *119,700 cu. yds. of concrete.* Guy H. James Construction Co.

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MEN AND JOBS

AGC BOARD MEETING—Glen W. Maxon, of the Maxon Construction Co., Dayton, Ohio, and president of the Associated General Contractors of America, met with A.G.C. leaders at the association's mid-year meeting of the governing and advisory boards. Left to right are: H. E. Foreman, managing director; Mr. Maxon; Arthur S. Horner, of the A. S. Horner Construction Co. Denver, Colo., the current vice-president who was nominated by the boards for president in 1952; and C. P. Street, of the McDevitt & Street Co., Charlotte, N. C., who was nominated for vice-president in 1952.

New Appointments

Highway departments

John B. Archer is now district engineer, W. Va. highways at Clarksburg.

E. G. Loser is construction engineer, Huntington district, W. Va. highways.

Fred Radford is an engineer for North Carolina highways at Rutherfordton.

Charles W. Snell, Jr., office engineer North Carolina Highway Department at Kinston, N. C., has been called to active duty with the Marine Corps, and now is stationed at Camp Lejeune, N. C.

George Hogan has replaced Walter G. Shull as resident engineer at Oxford, N. C., for the North Carolina Highway Department.

C. H. Nelson has been appointed chief engineer of the Ontario Department of Highway, succeeding A. A. Smith, retired. **W. A. Clarke** has been appointed assistant chief engineer. Mr. Clarke joined the department in 1930 after having graduated as a civil engineer from Queen's University, Kingston, Ont.

Robert M. Howard, assistant engineer for the Chatauqua County, N. Y., highway department has been appointed deputy highway superintendent. He joined the engineering department in May, 1930, after attending Cornell University.

Industrial and Commercial

A. B. Fisher, Jr., Chief engineer for the engineering and construction division of Koppers Co., since 1949, has been named operating manager of Koppers Freyn Engineering Department offices in Chicago, to succeed Gordon Fox, who will retire Jan. 1, 1952.

M. W. Millard of Wilson, N. C., is construction superintendent for the Jones Brothers Construction Co. on the construction of a $3,245,000 expansion program at the Eastern Carolina Tuberculosis Sanatorium at Wilson.

Bureau of Reclamation

Lawrence H. Hanson, supervising hydraulic engineer of the Reclamation Bureau's Missouri-Oahe district at Huron, S. D., since 1948, has become hydraulic engineer at Region 6 headquarters in Billings. He is a graduate of the University of Minnesota and has been employed by the Department of the Interior since 1944.

Government agencies

Maj. Gen. Stanley L. Scott has taken command of the Engineer Center at Fort Belvoir, Va., succeeding Maj. Gen. D. L. Weart, who retired Aug. 31.

Ralph L. Miller, chief of the Navy Oil Unit of the Alaskan and Foreign Branch, has been designated chief of the fuels branch of the Geological Survey, United States Department of Interior, according to William E. Wrather, director of the survey.

Lindon J. Murphy, professor of sanitary engineering, University of Missouri, has departed for Germany to consult with representatives of German public health departments on the implementation of a modern sanitary engineering program.

State, City and County

Lee Bolen, Fremont, Ohio, has been employed as resident supervisor for Fremont's $1,093,365 water expansion and remodeling project.

Garland E. Marple has been named director of the Regional Highway Planning Survey for Greater Washington, succeeding **A. Clason Taylor.** An employe of the Bureau of Public Roads since his graduation from the University of Kansas in 1930, he will direct a staff of 15 in completing a two-year study leading toward development of a master highway and bridge transportation plan, jointly sponsored and financed by Maryland, Virginia, the District, and the Federal Bureau of Public Roads. Marple served two years in Alaska during World War II on the Alcan Highway.

A. Clason Taylor, has been assigned to a two-year tour of duty as a division engineer in the Philippine Islands for the Bureau of Public Roads.

Chairman H. A. Beckwith of Texas Board of Water Engineers has been appointed to a new six-year term. A civil engineer he worked on Rio Grande irrigation projects for some time.

E. R. King is superintendent of the water department at Dunn, N. C.

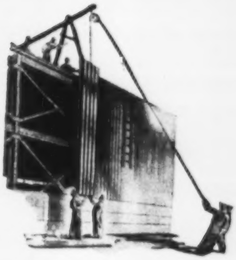
Wayland B. Broadwell, Jr., has been named superintendent of the combined city streets and sanitation departments at Smithfield, N. C.

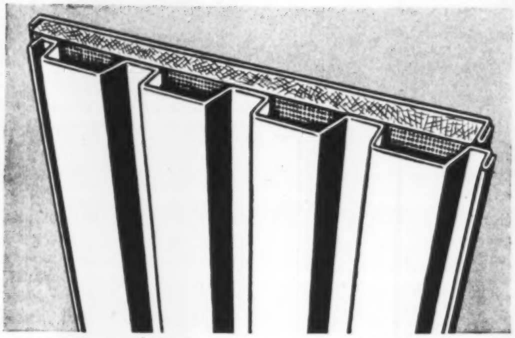
Honors

Glenn Murphy, professor of theoretical and applied mechanics and senior engineer for the Iowa State College Institute for Atomic Research, recently received the Westinghouse Award of the American Society for Engineering Education.

H. E. Moses, consulting chief engineer and **J. R. Hoffert,** chief engineer of the Pennsylvania Department of Health's bureau of sanitary engineering, have received, respectively, the Charles Alvin Emerson Medal and the Arthur Sidney Bedell Award for their outstanding service to the Federation of Sewage and Industrial Wastes Associations.

FOR WALLS... *fast*





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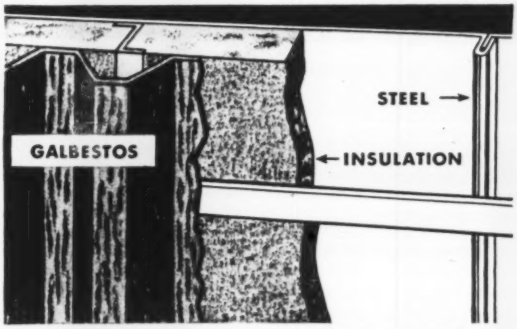
WEIGHT	SIZE	INSULATION	FINISHES*
In Steel—6 lbs./sq. ft.	2' wide; lengths up to 25' depending on material used.	Complete panel is 3¼" thick with insulation value superior to a 12" masonry wall with furred plaster. U-factor—.14 in aluminum; .18 in steel.	Steel, aluminum, stainless, Galbestos metal**. *Depending on availability.



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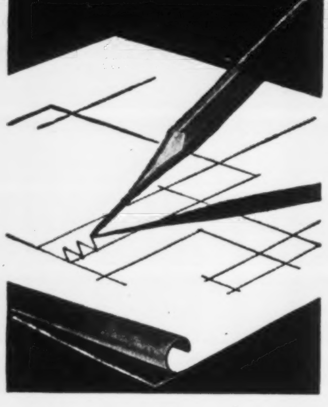

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EDUCATION, RESEARCH

TOPOGRAPHIC MAPPING STUDENTS—A novel course in topographic mapping for newly-employed engineers of the United States Geological Survey was given recently at Clemson College, Clemson, S. C. The summer training gave the survey's topographic division more than 40 field engineers, according to W. K. McKinley, director of the program. The instructors were, left to right—D. H. Robinson, assistant professor of mechanics and hydraulics at Clemson College; Edward L. Loud, photogrammetrist, Geological Survey; Walter L. Lowry, associate professor civil engineering, Clemson College; Alfred C. Stiefel, topographic engineer, Geological Survey; Dean James H. Sams Jr., of the Clemson School of Engineering, and W. K. McKinley, E. E. Van Brunt, G. B. Grunwell, F. B. Neary and E. A. Krahmer, topographic engineers of the Geological Survey.

Ratcliff, research director, resumes university work

Richard U. Ratcliff, until Aug. 31 director of housing research for the Housing and Home Finance Agency, has resumed his position as professor of land economics at the University of Wisconsin.

Dr. Ratcliff left the university on a year's leave of absence at the end of 1949 to set up the new HHFA housing research program authorized by the Housing Act of 1949. His leave was extended at the agency's request.

Joseph H. Orendorff, who has been assistant director of the HHFA Division of Housing Research and its chief of housing technology, has been named acting director of research. Orendorff has been engaged in architectural and planning aspects of housing with the federal government since 1939. Since 1946, he has served in various key capacities in connection with technical and general housing research undertaken by the agency.

"Dr. Ratcliff during the last year has served with distinction in launching the major comprehensive program of housing research authorized in the Housing Act of 1949," Raymond M. Foley, HHFA administrator, said. "I greatly regret that his prior commitments will not permit him to continue with the agency. Under Dr. Ratcliff's leadership scores of significant projects have been undertaken toward the production of better housing at lower cost. Recently the program has been concentrated on the special housing problems in connection with the defense effort."

Utica College teaches contracting and building

Syracuse University's Utica College at Utica, N. Y., has designed a program intended to train students in actual building rather than the usual concentration on more intensive engineering theory. The idea has the backing and approval of architects, builders, and contractors in the Central New York State area. In fact, some of the local contractors helped design the course. Frank C. Delle Cese, a graduate of Cornell Universit and officer of the Central New York Institute of Architects, was chosen to supervise the program and teach the technical courses.

Major portions of the program include descriptive geometry, analysis of architectural drawings, mechanics for contractors, materials and assembly, the business of contracting, the history and appreciation of architecture, and a wide array of general courses for the liberal side.

The four-year program requires "in service" training during the junior and senior year, either as full-time employment during the summer, or part-time work during the school year. The course instructors and its backers help students to find employment

(*Continued on page 58*)

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Mount Morris Dam, N. Y. The 300-350 tons per hour rock crushing plant is Telsmith designed and equipped.

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TELSMITH EQUIPMENT FOR DAMS

OTHER DAMS BUILT WITH TELSMITH EQUIPMENT

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- Boysen Dam, Shoshoni, Wyo.
- Buggs Island Dam, Virginia
- Carpenter Dam, Arkansas
- Cascade Dam, Washington
- Center Hill Dam, Tennessee
- Clark Hill Dam, Augusta, Ga.
- Conowingo Dam, Conowingo, Md.
- Dale Hollow Dam, Tennessee
- Davis Dam, Nevada
- El Presidente Dam, Mexico
- Fort Gibson Dam, Oklahoma
- Grand Coulee Dam, Washington
- Kortes Dam, Wyoming
- Norfork Dam, Arkansas
- South Holston Dam, Tennesse
- Watauga Dam, Tennessee

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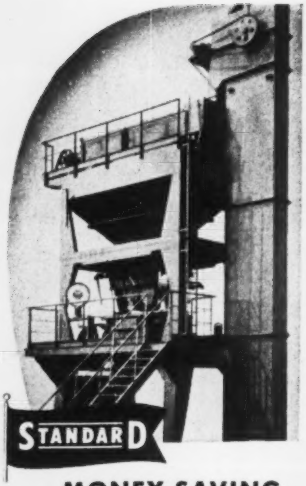

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Education Research . . .

Joint road research program in Tennessee

The Tennessee Department of Highways and Public Works has for some time found itself faced with the necessity of seeking additional means of meeting the increasing demands of highway traffic by providing better highway facilities and further preserving existing facilities.

To accomplish this purpose, the highway department obtained from the 1951 state legislature an act which authorizes the commissioner of highways and public works to contract with the University of Tennessee for a joint research program, the objectives to be as follows:

(1) To develop more economical methods of designing, constructing and maintaining highways.
(2) To develop better and more modern methods of testing and evaluating the suitability of various materials and to develop new techniques in the treatment and combination of local materials.
(3) To investigate new materials as well as new methods and new uses for present materials.
(4) To train men in the fundamentals of highway engineering, in order that highway personnel be maintained at the highest efficiency.

To inaugurate this research program a cooperative agreement has now been executed by the highway department and the University of Tennessee and the necessary funds for the first year's operation have been allocated. There has been established an advisory council made up of three members appointed by the university and three by the commissioner of highways and public works. The work will be performed by the University of Tennessee under the director of the engineering experiment station. Technical direction of the program will be by a program director. Complete reports will be made upon the completion of each project and as occasions demand. The advisory council includes G. H. Hickox, associate director of the university experiment station, Prof. A. T. Granger, head of the civil engineering department, and Prof. J. W. Walker of that department. The three members representing the highway department are: R. S. Patton, engineer of surveys and design, R. C. Fergus, assistant highway engineer, and L. M. Bare, assistant highway engineer.

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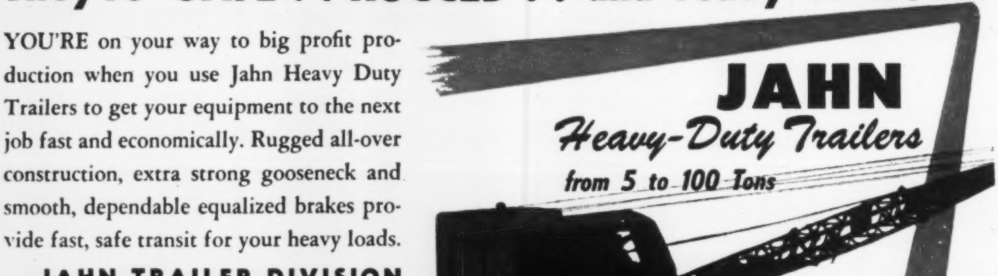

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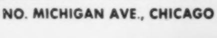
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MEETINGS

Attendance at the recent 3-day meeting of the New England Water Works Association totaled nearly 750 and membership again has crossed the 1,000 mark. Officers elected for the coming year include: Frederick A. O. Almquist, president succeeding T. R. Camp; W. B. Duffy, vice-president; W. P. Melley; reelected treasurer; Scott Keith, director for three years.

Andrew Stuart, manager of the Anderson Sheet Metal Co. of Providence, R. I., was elected president of the New England Sheet Metal and Roofing Contractors' Association at its meeting in Providence. It was an organizational meeting and by-laws were adopted. Anthony Lembo is secretary of the group.

Wayne W. Wood, Barryton, Mich., has been elected president of the Northern Michigan Road Commissioners Association.

Herbert W. O'Grady is now executive secretary of the Virginia branch of the Associated General Contractors of America at Richmond.

Active, associate and allied members of the Associated Equipment Distributors from the eleven Western states and Canada will hold a joint regional meeting, the first of its kind, at Sun Valley, Idaho, Oct. 12 and 13. The regions included are Region 11, made up of California, Arizona, Hawaii, Nevada, and Region 12, embracing Washington, Oregon, Montana, and Idaho; Region 14, which is composed of Colorado, Wyoming, Utah, New Mexico, and the vicinity of El Paso, Texas; and Region 15, which includes Canada.

Auto accidents in New York State could be cut 40% by planning new highways according to modern safety specifications, William F. Duffy told the 22nd annual convention of town highway superintendents in Buffalo. He also said "Our association supports the New York Thruway system 100%. Its safety features, which alone should save hundreds of lives every year, will make its cost to the state a good investment."

Gus Rayner, executive secretary of the New York State Bituminous Concrete Producers Association, urged the superintendents to plan their new roads to satisfy the needs of the national defense effort.

"Your roads should be built to carry the loads of the main highways, which might be destroyed in an enemy attack," he asserted.

CALENDAR

Concrete Reinforcing Steel Institute, semi-annual meeting, Grove Park Inn, Asheville, N. C., Oct. 8-13.

Regional Plan Conference, N. J. and Conn., Hotel Roosevelt, New York City, Oct. 9.

Public hearing on N. Y. State Building Construction Code for 1- and 2-family dwellings, Room 500, State Office Bldg., 80 Center St., N. Y. City 2 p. m. Oct. 8, and Auditorium University College, Syracuse University, 601 E. Genesee St., Syracuse, 2 p. m. Oct. 9.

National Association of Housing Officials, Hotel Statler, Washington, D. C., Oct. 9-12.

Structural Engineers Association of California, The Ahwahnee, Yosemite National Park, Calif., Oct. 11-13.

American Society of Planning Officials, national conference, William Penn Hotel, Pittsburgh, Pa. Oct. 14-18.

Street Maintenance and Sanitation Officials, Ohio, Hotel Pic-Ohio, Youngstown, O., Oct. 18-19.

Engineers Council for Professional Development, Statler Hotel, Boston Mass., Oct. 19-20.

National Council of State Boards of Engineering Examiners, Statler Hotel, Boston, Mass., Oct. 21-24.

Engineers' Society of Western Pennsylvania, water conference, William Penn Hotel, Pittsburgh, Pa., Oct. 22-24.

American Society of Civil Engineers, annual meeting, Statler Hotel, New York City, Oct. 22-25.

National Standardization Conference Waldorf-Astoria Hotel, N. Y. City Oct. 22-24.

American Association of State Highway Officials, Fontenelle Hotel, Omaha Neb., Oct. 23-26.

American Institute of Steel Construction, Inc., annual meeting, the Greenbrier, White Sulphur Springs, West Va., Oct. 22-25.

California section, American Water Works Association, Fairmount Hotel San Francisco, Oct. 23-26.

Florida Sewage and Industrial Wastes Association and Florida section A.W.W.A. Princess Issena Hotel, Daytona Beach, Fla., Oct. 28-31.

Structural Clay Products Institute, Greenbrier Hotel, White Sulphur Springs, W. Va., Oct. 29-31.

American Concrete Institute, regiona Sheraton Hotel, St. Louis, Mo., Oct 30-31.

American Public Health Association, annual meeting Civic Auditorium, San Francisco, Calif., Oct. 29-Nov. 2.

Conference on Coastal Engineering, Rice Hotel, Houston, Tex., Nov. 7-10.

Conference on Atomic Installation in Buildings, Building Research Advisory Board, National Academy of Science auditorium, Washington, D. C., Nov. 27-28.

ONE OF SEVEN

Big Producers

AT KEY WEST, FLORIDA

Seven Layne Well Water Supply units, each testing around 8,000 gallons per minute, have been installed to furnish cooling water for a power project at Key West, Florida. Permanent installations will be Layne Vertical Turbine type Pumps, each having a capacity of 2,300 gallons per minute. Preliminary tests indicate that efficiency will be much higher than promised.

Layne's method of designing, building and installing well water supply units is fully proven in higher production and lower operation cost. All installations are by Layne's own field crews and the work, from start to finish, is under the constant supervision of Layne engineers. Thoroughly tested before final delivery, Layne wells and pumps provide the utmost in dependability and long life.

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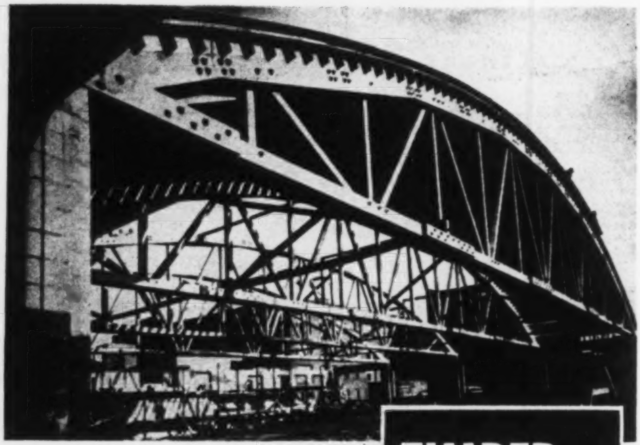
WATER SUPPLY
WELLS & PUMPS



120' Arch-Teco trusses designed and fabricated by Timber Structures, Inc., Portland, Oregon.

TIMBER FOR GARAGES AND HANGARS

The widespread recognition of timber as an engineering material has given the building industry a new tool in this easily worked, versatile material.

Now in these emergency times timber construction is going ahead on early delivery schedules.

Hangars and garages are being built with timber. So are warehouses, factories and other large structures. Heavy timber construction buildings, equipped completely with approved sprinkler protection, have shown a remarkable record of fire safety over many years.

The building profession now knows that, pound for pound, timber does as much work as other materials, and in its proper fields of use performs an equally satisfactory service, and generally at lower cost.

Timber fabricators in all sections of the country are ready to help you.

Specify timber—there's plenty of it and ready as usual for early delivery.

LUMBER AND ITS UTILIZATION
PICTORIAL REVIEW OF HANGAR FIRE TESTS
NATIONAL LUMBER MANUFACTURERS ASSOCIATION

TIMBER ENGINEERING COMPANY, 1319 18th St., N.W., Washington 6, D. C.

Please send me FREE copy of "Pictorial Review of Hangar Fire Tests," published by National Lumber Manufacturers Association.

We plan to build a __________

NAME __________

COMPANY __________

STREET __________ CITY __________ STATE __________

ENR

OBITUARY

Wilfred F. Snow, 66, for many years a contractor at Lynn, Mass., died at Newton, N. H., on Sept. 16.

George B. Reidy, 59, for 25 years a civil engineer for municipal departments in Buffalo, N. Y., died Sept. 16. He was graduated from Ohio Northern University in 1921 as a civil engineer, and started his career with the Bethlehem Steel Co. He began his work with the old Engineering Department of Buffalo in 1926, remaining in the job when the Division of Sewers was absorbed by the Buffalo Sewer Authority in 1938.

Frank H. Jaeger, 67, a retired government civil engineer, died Sept. 15 in Buffalo, N. Y. He was with the U. S. Coast Guard for many years. He retired 12 years ago.

George A. Somerville, 62, supervisor of the Paris, Ill., division of the Illinois Highway Division, died Sept. 8.

David R. Bell, 84, retired construction superintendent of the Dominion Bridge Co. Ltd., died in Montreal, Que., Sept. 11. He had been with the company 50 years.

George Harding Moore, 59, chief of the United Fuel Gas Co. civil engineering division for West Virginia and a former civil engineer for the New Jersey State Highway Department and Pennsylvania Railroad, died Sept. 15 at Charleston, W. Va. He was a graduate of Pennsylvania State College, holding bachelor of science and civil engineering degrees. He was a veteran of World War I.

Roland M. Archibald, 52, a Federal Communications Commission engineer, died Sept. 11 in Washington, D. C. He was in the office of the FCC chief engineer in Washington and before that he supervised the FCC monitoring stations in the Gulf States area.

William E. O'Reilly, former road building contractor, died Sept. 15 at Lockport, N. Y. He went to Lockport in 1910 as a construction superintendent during expansion of the Erie Canal, and continued a contracting career in the Lockport area. At various times he was associated with George Bewley under the firm name of Bewley & O'Reilly, and with Emmet Gould under the name, Gould & O'Reilly. In later years he was associated with his sons as O'Reilly & Sons Construction Co.

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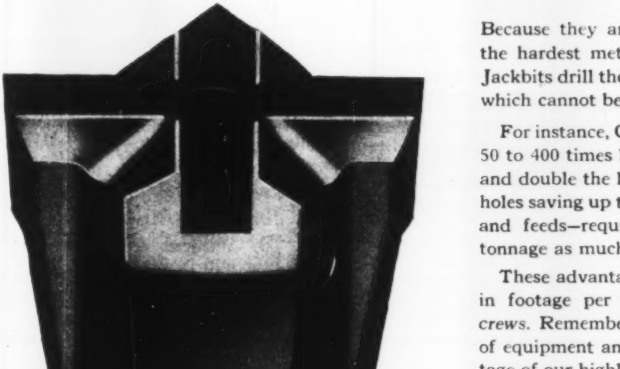

Because they are tipped with Carboloy inserts—one of the hardest metallic substances known to man—Carset Jackbits drill the hardest rock with a *speed* and *efficiency* which cannot be approached by the finest steel bits.

For instance, Carset Jackbits drill 50% faster—last from 50 to 400 times longer—practically eliminate bit changes and double the life of drill steel. They eliminate tapered holes saving up to 30% on dynamite—permit longer steels and feeds—require much less maintenance—and boost tonnage as much as 50% or more.

These advantages all add up to a tremendous increase in footage per shift—*without increasing your drilling crews.* Remember Ingersoll-Rand offers a complete line of equipment and service for rock drilling. Take advantage of our highly trained and skilled personnel. There is an Ingersoll-Rand branch office and distributor near you. Write or call today.

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If you are planning a new building, or modernizing of old walking surfaces indoors or out, look into the advantages of open steel flooring . . . the versatile flooring . . . now! New catalog illustrates and describes wide range of modern applications, its safety features, strength, simplicity of installation and maintenance. Send for a copy.

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LABOR

Paducah AEC plant in a muddle

Hardly had the ink dried on last week's report that 920 operating engineers had returned to work at the Paducah, Kentucky atomic plant when 10,000 workers were reported idle again, this time as the result of a quickly-settled sheet metal workers' strike. This is the series of events that has transpired during a one-week period:

(1) Jurisdictional dispute between laborers and carpenters which was quickly settled by journeymen and agents of respective locals on the job.

(2) Appearance of two unidentified pickets the following day at the plant's main entrance carrying signs that "McGraw is unfair to organized labor". (F. H. McGraw & Co. holds the $300 million contract.)

(3) Walkout of 920 operating engineers, as explained last week, which allegedly was a separate action from the picketing. This snarled up steel erection, concrete placing, loading, unloading, hoisting and grade work. It too was short lived, fortunately, and all hands returned to work on the last shift that day or on the first shift for the following morning.

(4) Next the sheetmetal men wanted transportation allowances for travel to and from Louisville and based their claims on the fact that they had previously established agreements with Louisville employers for such reimbursement on jobs beyond the city limits. The argument seems to be over just what distance beyond the city limits that this agreement becomes null and void. Both the general contractor and the Atomic Energy Commission are reported to be in agreement in contending that theirs is a separate job and that the provision devised for the Louisville shops has no place in the Paducah atomic plant picture.

Missouri municipal workers still out

City manager H. P. Phelan of Moberly, Missouri announced that the city was getting ready to "take the proper legal steps to carry out the city's functions as provided by law" to protect the people from a strike of unionized municipal employees. Some 20 workers, representing public health and street departments went on strike for what they termed "an adequate working wage", and the walkout was enough to tie up activities of several municipal departments.

In his statement outlining the City Council's firm policy, Phelan quoted from a Missouri Supreme Court decision of 1947 which holds that "public office or employment never has been and cannot become a matter of bargaining and contract." With that the city fathers of Moberly continued the stalemate and declared they can't negotiate a wage contract with the strikers.

Canadian steel men want wages equal to U. S.

Canada's biggest union, the 60,000-member United Steel Workers of America (CIO-CCL) launched a wage drive last week to bring their pay up to a level equalling that of their U.S. counterparts. The move, brought to a head at the annual policy conference, means that the union will go after additional increases ranging from nine to twenty cents an hour plus any further increases obtained by U. S. steelmen in current or future negotiations.

The USWA's action is of considerable significance on the labor wage front, since the union, besides being the biggest, has often set the pattern and pace for demands of many other unions.

Present officers to continue with AFL

The American Federation of Labor went into its 71st year at San Francisco last week supporting a broad program of labor unification and with the re-election of officers which have guided its recent history. President William Green enters his 28th successive year in that office, and thirteen vice presidents and secretary-treasurer George Meany were given unanimous support. New York was chosen as the 1952 convention city.

On the policy side the 8-million-member group (largest in American labor) adopted a resolution calling for organic unity with other American unions. Although it called for meetings with CIO leaders to unite the big two, (CIO has an estimated 4,500,000) it made it clear that the union of unions must be on the AFL terms.

"There is no reason whatsoever," the resolution stated, "for any bona fide free trade union organization remaining outside the ranks of the AFL."

THE SEAMAN DOES MORE THAN MIX— IT BLENDS THE COARSE AND FINES!

A road mix may be excellent from the standpoint of coverage or distribution of binder but more than that is essential to obtain the highest possible load bearing value.

The coarse aggregate must be proportioned and distributed uniformly throughout the base.

The fines must fill the voids throughout as a uniform blend, for if segregation of fines and coarse occurs the base will ravel under traffic and become greatly weakened.

This accurate balanced-blending is accomplished automatically by the SEAMAN MIXER. That is why SEAMAN-mixed base courses are superior — whether of bitumious construction, soil-cement, or of any of the many excellent stabilization methods in use today.

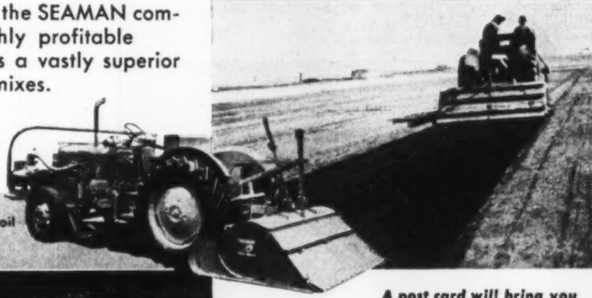
That is also the reason why macadam construction, long greatly curtailed because of the high cost of hand labor formerly needed, is becoming widely popular again. The SEAMAN automatically produces the highest type of macadam base at 1/10 to 1/5 the cost of hand brooming. This has been proved by actual road construction.

In road-mixing of any type the SEAMAN completes the work at a highly profitable saving in time — and does a vastly superior job because it blends as it mixes.

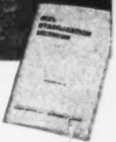
So, do all your mixing with the SEAMAN.

Typical cross section of a SEAMAN-mixed base before compaction showing the uniform proportioning and blending of coarse and fines from bottom to surface of the mix. Notice the light blanket of fines at the surface which the SEAMAN automatically produces.

SEAMAN PULVI-MIXER ON AIRPORT CONSTRUCTION — Mixing aggregate macadam. Note even blend of coarse and fine aggregates behind SEAMAN.



"Train" of 2 SEAMANS working in soil cement processing 20 feet wide.



A post card will bring you this FREE BOOK "SOIL STABILIZATION METHODS"

100 pages of up-to-the-minute information about all types of bituminous, soil-cement and other stabilization processes. Send for it now.

SEAMAN MOTORS, INC.

281 N. 25th STREET
MILWAUKEE 3, WIS.

These are the straight facts... the complete story on "Century" Asbestos-Cement Pressure Pipe

IN hundreds of communities, in nearly every section of the country, "Century" Asbestos-Cement Pressure Pipe is saving taxpayers' dollars by providing trouble-free water main service. Here are the actual facts on "Century" Pipe for your consideration in your own water main requirements.

History of Asbestos-Cement Pipe

For several years prior to 1920, engineers in this country received reports of a revolutionary new kind of pipe that was being widely and successfully used in Europe. It was said to have great durability, and to require none of the costly maintenance that had long been accepted as matter-of-course in the distribution of water throughout a community. This pipe was, of course, Asbestos-Cement Pipe. It was first manufactured experimentally in 1913, and within three years was established on a commercial basis. By 1921, seamless Asbestos-Cement Pipe was generally accepted for many important water mains and other pressure services throughout Europe. In that same year, the manufacturing process was patented in the principal industrial countries of the world. Today, "Century" Asbestos-Cement Pipe is a truly modern pipe—improved by Keasbey & Mattison and made with the help of new technological discoveries and manufacturing methods.

Strong and Durable

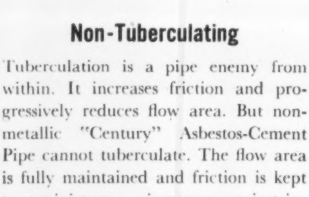
In water main service, long pipe life is a primary consideration. The two ingredients of "Century" Pipe—asbestos and portland cement—have been known and used for years for projects that were built to endure. The special Keasbey & Mattison process also contributes to building exceptional strength into "Century" Asbestos-Cement Pipe. And K&M's system of rigid quality control is further assurance of high strength and uniform quality. As a routine manufacturing step, every section of "Century" Pipe is hydrostatically tested in excess of its stated working pressure to insure an ample factor of safety.

Non-Corrosive

Corrosion is an external enemy which first weakens pipe and then ultimately destroys some types of pipe. This means that waterworks are, in many instances, faced with the necessity of replacing part or all of a line. "Century" Asbestos-Cement Pipe, being non-metallic, cannot corrode. Nor is it affected by stray electric currents. Therefore it is also immune to electrolysis—another common type of pipe enemy.

Non-Tuberculating

Tuberculation is a pipe enemy from within. It increases friction and progressively reduces flow area. But non-metallic "Century" Asbestos-Cement Pipe cannot tuberculate. The flow area is fully maintained and friction is kept to a minimum . . . insurance against increased pumping cost over the years.

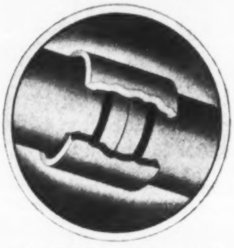


Strong, light-weight "Century" Pipe is easy to handle, easy to lay.

Easy to Handle—Easy to Lay

The comparatively light weight of "Century" Pipe makes handling easier. Generally speaking, when the installation recommendations supplied with the pipe are followed, even with unskilled labor "Century" Asbestos-Cement Pipe can be laid easily, simply, and quickly.

"Century" Simplex Couplings



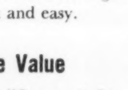
"Century" Simplex Couplings are installed quickly, easily, even by unskilled labor.

Simplex Couplings are made of the same materials—asbestos and portland cement—as the "Century" Pipe. They give you a combination of immediately and permanently tight joints that are also flexible, providing for up to 5° deflection. Simplex Couplings have only three parts: the asbestos-cement sleeve and two specially compounded round rubber gaskets. Assembly is quick and easy.

High Re-use Value

An important "plus". "Century" Pipe is so strong, durable and resistant to the wear of time, that it can be removed and relaid in its original pressure class at any time, using the same Simplex Couplings from the original installation.

Free Booklet



"Mains Without Maintenance" is a valuable reference book for anyone interested in pipe for water mains. *FREE*—write for it.

Nature made Asbestos . . .
Keasbey & Mattison has made it serve mankind since 1873

KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA
K&M best in asbestos ®

CONSTRUCTION BUSINESS

Contract awards reported leveling off

Construction contracts awarded during September totaled $917,158,000, holding even at the August rate of $229 million per week, Engineering News-Record reports show.

Although total awards showed a tendency to level off, federal construction was up 17 percent and public works up 6 percent over last month. Private construction offset the rise by dropping 5 percent from last month.

Total awards for the first nine months show federal work up 106 per cent over the same period last year, public works up 36 percent, but private construction up only 8 percent. Contracts awarded for industrial building have buoyed the private construction figures however, with a 179 percent increase during nine months over the same period last year—the largest increase in any classification.

• **Ups and downs**—Awards this month compared with last month show increases in the following classifications: earthwork and waterways up 254 percent; bridges up 31 percent; sewerage up 23 percent; residential building up 13 percent; highways up 2 percent; and public buildings up 1 percent.

Decreases were reported for awards in the following classifications, this month as compared to last: public housing off 77 percent; unclassified private construction off 39 percent; commercial building off 33 percent; unclassified public construction off 21 percent; water works off 20 percent; mass private housing of 18 percent.

• **West leads**—Geographically, awards for contracts West of the Mississippi saw an increase of 76 percent this month over last. Awards in the Middle West were up 9 percent.

Against these rises, declines were reported for the month in the following sections: Middle Atlantic, off 46 percent; Far West, off 21½ percent; New England, off 7½ percent; and the South off 4 percent.

Totals for the first nine months of the year show the South leading with 56 percent more in construction awards than during the same period last year; Middle West awards, up 41 percent; New England up 23 percent; West of the Mississippi up 19 percent; and Far West up 7 percent. Only the Middle Atlantic region shows less in awards than last year, off 9 percent. All construction awards are up 20 percent during the first nine months of this year over the same period last year.

ENR index shows construction costs up

Cost of materials and labor are up slightly according to the Construction and Building cost indexes of the Engineering News-Record.

Using 1913 as a base of 100, the Construction Cost Index for October stood at 546.48, an advance of .7 percent over the 542.61 index for September. The Building cost index reached 403.40, an advance of 0.9 percent over the September figure of 399.90.

Leading the advances was an increase in the cost of lumber. Cement, skilled labor, and common labor components in the index also are up. Only steel costs remained unchanged.

The lumber index stood at 98.54 for October, 2.1 percent above the index figure 96.51 for September.

• **Other increases**—The skilled labor index for October stands at 2.719, 0.6 percent over the 2.701 figure for September; The common labor index is up .5 percent from 1.637 in September to 1.645.

Fabricated steel tonnage drops slightly from peak

August shipments of fabricated structural steel dropped slightly to 240.072 tons from the June record of 257,066 tons—largest month since 1930—according to the American Institute of Steel Construction.

The backlog of tonnage available for future fabrication for the four months ending Dec. 31 amounted to 1,184,490 tons, and beyond that period another 1,563,825 tons of work stands on the industry's books, the Institute said. The potential volume of work ahead was 2,748,315 tons.

ENGINEERING CONSTRUCTION CONTRACTS REPORTED TO ENGINEERING NEWS-RECORD—SEPTEMBER, 1951

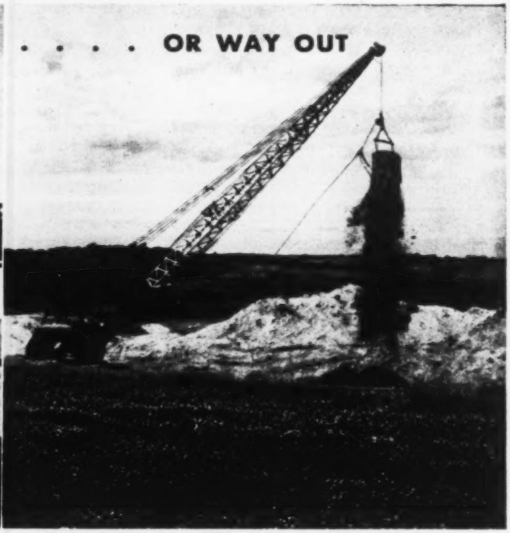
Engineering News-Record *reports continental U. S. construction projects of the following minimum costs — Waterworks, excavation, drainage and irrigation,* $34,000; *other public works,* $60,000; *industrial buildings,* $82,000; *other buildings,* $300,000
Four Weeks — Thousands of Dollars (000 Omitted)

	September, 1951							U. S. Cumulative Nine Months		%	Canada
	New England	Middle Atlantic	South	Mid-West	West of Mississippi	Far West	Total U. S.	1951	1950	Change '50 to '51	September, 1951
Public Works											
Waterworks	1,164	684	3,479	1,809	4,254	587	**11,977**	**162,006**	173,748	− 7	2,278
Sewerage	2,373	4,158	8,587	6,575	5,727	2,927	**30,347**	**244,548**	205,250	+19	994
Bridges	454	6,286	15,685	1,846	6,001	1,995	**32,267**	**243,392**	279,386	−13	794
Earthwork and waterways	35	7,801	3,363	1,297	9,541	46,516	**68,553**	**422,586**	326,820	+29	19,964
Streets and roads	5,670	11,143	28,724	17,317	28,496	17,188	**108,538**	**916,052**	977,696	− 6	5,113
Public buildings, residential	3,932	517	....	1,913	....	....	**6,362**	**558,022**	228,434	+144	3,694
Other public buildings	5,412	14,265	27,421	48,738	30,197	18,639	**144,672**	**1,717,256**	1,243,921	+38	48,205
Unclassified	15,288	9,174	6,851	1,590	17,534	8,353	**58,790**	**816,232**	302,763	+170	9,385
Total public	**34,328**	**54,028**	**94,110**	**81,085**	**101,750**	**96,205**	**461,506**	**5,080,094**	**3,738,018**	**+36**	**90,427**
Federal government (included in above classifications)	15,180	21,498	20,602	17,531	22,552	59,338	**156,701**	**1,926,317**	**933,203**	**+106**	**42,837**
Private											
Bridges	....	....	....	....	81	....	**81**	**11,658**	6,895	+69	....
Industrial buildings	6,502	25,273	30,188	34,903	174,228	5,786	**276,880**	**3,153,355**	1,130,970	+179	40,087
Com'l. buildings, residential	1,440	43,233	33,523	11,900	26,416	9,011	**125,523**	**1,459,842**	2,646,682	−45	4,690
Other commercial buildings	1,547	4,470	6,098	5,265	8,383	7,586	**33,349**	**498,381**	748,919	−33	4,496
Unclassified	151	....	1,850	2,273	15,135	410	**19,819**	**521,112**	692,932	−25	10,000
Total private	**9,640**	**72,976**	**71,659**	**54,341**	**224,243**	**22,793**	**455,652**	**5,644,348**	**5,226,398**	**+ 8**	**59,273**
Total Engineering Construction:											
September, 1951 — 4 weeks	**43,968**	**127,004**	**165,769**	**135,426**	**325,993**	**118,998**	**917,158**	....	....	....	**149,700**
August, 1951 — 5 weeks	59,472	294,182	215,774	155,626	231,430	189,231	**1,145,715**	....	....	....	155,104
September, 1950 — 4 weeks	31,978	225,770	179,453	161,834	261,824	98,671	**959,530**	....	....	....	71,630
Nine Months — 1951	**507,028**	**1,977,322**	**2,237,984**	**1,860,285**	**2,626,608**	**1,515,215**	....	**10,724,442**	....	**+20**	**972,329**
Nine Months — 1950	411,677	2,178,223	1,434,690	1,314,975	2,212,370	1,412,481	....	....	8,964,416	....	504,040
% Change '50 to '51	+23	−9	+56	+41	+19	+7	....	....	....	....	+93

MANITOWOC
MODEL 3900
CRANE · CLAM · DRAGLINE

BIG LOADS...

Replacing a 28 ton kiln section, with a 100 foot boom Manitowoc 3900. Torque converter assures smooth, fast placement.



Coal stripping with a 3900. Handling a 2½ yard bucket on a 100 foot boom. Big capacity — big reach.

More Capacity

than any machine in its class!

BIG LOADS

60 tons at 12′ — or 30 tons at 30′ means plenty of capacity for the big loads. When equipped with a torque converter you can "inch" your biggest loads into position with pin point accuracy.

WAY UP

Out on jobs there are Manitowoc 3900's with 140′ booms, with jibs up to 20 feet extra — enables you to set steel, place concrete, for 13 to 14 story buildings, with complete safety.

WAY OUT

Specially designed for long boom work. Look at this capacity: 20,000 lbs. with a 100′ boom at 60′ — even with a 100′ radius you handle 9500 pounds. As a dragline you can move dirt as far as 150′ — handle 2½ yd. bucket on a 100′ boom. That's reach — that pays off in work capacity.

Out on the job, where you can PROVE performance, the Manitowoc 3900 has set amazing new standards. You get rated capacity of 60 tons at 12 feet BUT farther out is where this husky unit pays off. Exceptional stability provides a bonus as much as 8½ to 18 tons greater than other machines of its rating and price class.

The reason is found in its long (20′-4″) wide (16′-8″) crawler base which supplies extra stability and low ground pressure. The counter-weight, an integral part of the revolving frame, is placed well back and low, carried directly by the boom support straps.

And when you consider such features as the torque converter; easy shipment on flat cars or trailers; simplicity of design; high operating speeds, you've got a machine that will outperform *any* other on *any* job. MANITOWOC ENGINEERING WORKS, MANITOWOC, WISCONSIN.

MANITOWOC

SHOVELS 1-5 YD. · Speedcrane · **CRANES 18-100 TON**

MATERIALS AND LABOR PRICES

Market quotations on construction materials and wage rates reported monthly by ENR correspondents
November Materials, and Labor Prices will appear in November 8, 1951 issue

CEMENT, AGGREGATE, READY-MIXED CONCRETE—F. O. B. CITY

	PORTLAND CEMENT* Per bbl. C/L lots cash. dis. not deducted			SAND AND GRAVEL Per ton. carload lots			CRUSHED STONE Per ton. carload lots		CRUSHED SLAG Per ton. carload lots, f.o.b. plant		CONCRETE BLOCK 8 x 8 x 16-in.; truckload del.; per block		CONCRETE Ready Mixed 1:2:4, over. 50 c.y., del.
	Paper	Bulk	Mortar	Gravel, 1½ in.	Gravel, ¾ in.	Sand	1½ in.	¾ in.	1½ in.	¾ in.	Sand grav.	Lt. wgt. agg.	
Atlanta	$3.76	$3.45	3.25	$2.00	$2.00	$1.75	$2.10	$2.10	$1.65	$1.85	$0.191	$0.191	$11.50
Baltimore	3.71	3.40	3.35	2.50‡a	2.50‡a	2.00‡a	2.70‡a	2.80‡a	2.60‡a	2.55‡a	.17	.17a	10.80
Birmingham	3.11	2.68	2.82g	2.24n	2.24n	1.94n	2.50	2.50	1.10	1.30	.165	.165	7.85
Boston	4.01	3.69	3.58	2.50a	2.50a	2.50a	1.50a	1.60a	....	....	.206	.22a	11.50h
Chicago	3.29	2.99	3.94	3.00‡b	3.00‡b	3.40‡b	3.00‡b	3.00‡b	2.00‡	2.00‡	.22	.22b	11.50
Cincinnati	3.46	3.18	3.16	2.00‡c	2.00‡c	2.05‡c	2.35‡h	2.35‡h	....	....	.21	.225a	10.95f
Cleveland	N. A. in C. L.		....	2.05ef	1.85f	1.65	3.65a	3.65a	2.85‡	2.85‡	....	.23	13.00g
Dallas	2.95	2.65	2.70	2.18	2.28	1.84	2.22	2.38	....	....	.125e	.215	9.30
Denver	3.89	3.64	3.89	1.85	2.00	1.20	....	....	....	....	.22	.255a	10.10
Detroit	3.25f	2.98	3.04	4.00‡b	4.00‡b	3.50‡b	4.00‡	4.00‡	4.00‡	4.00‡	.19	.20a	10.55f
Kansas City	3.30	3.03	3.15	1.90‡	1.90‡	1.50a	1.90‡a	1.90‡a	....	....	.23ag	.23/24c	10.95b
Los Angeles	4.00a	3.52a	4.72	1.95a	2.20a	1.95a	2.08a	2.08a	....	....	.11f	.22	10.00lhm
Minneapolis	3.68cd	3.37cd	3.33	2.30‡ag	2.30‡ag	1.35‡ag	2.50‡ag	2.50‡ag	....	....	.23ik	....	11.25fi
Montreal	2.66ac	2.51ac	....	2.50	2.50	2.00i	1.05ij	1.30ij	....	....	.28	.20a	9.95ek
New Orleans	3.20e	2.90e	3.18	2.32	2.32	1.82	....	....	1.05	1.25	.25	....	12.90
New York	3.81	3.50	3.40	2.35bk	2.35bk	1.60bk	2.50bl	2.50bl	....	....	....	....	11.30an
Philadelphia	3.38/3.68‡	3.07/3.37‡	3.38‡	2.65‡	2.75‡	2.15‡	2.10‡	2.15‡	1.75	1.65	.22/.25	....	11.50
Pittsburgh	3.32	3.04	3.32	2.15‡	2.15‡	2.10‡	2.60‡	2.60‡	2.15	2.15	.23d	.23d	11.00
St. Louis	3.25/3.45b	2.95/3.10b	3.10/3.25	2.90am	2.70am	2.30/2.70am	1.70j	1.70j	1.25	1.25	.215	.27ci	10.40
San Francisco	3.35	2.95	....	1.88	1.88	1.98	1.98	....	....	....	....	.22cl	10.30c
Seattle	3.80a	3.25a	4.50h	3.00‡bm	3.00‡bm	3.00‡bm	3.50‡bm	3.50‡bm	....	....	24j	.3325j	10.95j

‡ Delivered. * Prices incl. dealers comm. except as noted.
CEMENT: a Subj. to 10¢ dis. b Less 2% for cash. c CL price dealers' comm. not incl. d Dealers sell only LCL. e Plus switching charges. f Paying up to $3.80 for cement brought in from outside sources. g Warehouse pickup. h LCL.
SAND, GRAVEL, STONE & SLAG: a Truck lots. b Per cu. yd. c 5 tons or more. e ¾". f Pea gravel. g Less 5% for cash. h Less than 5 tons. i Sales tax incl. j F.o.b. quarry. k Barge lots asd. l F.o.b. scow Hudson river. m Less 2% for cash. n F.o.b. cars.

CONCRETE BLOCK: a Cinder. b Waylite. c Haydite. d Celocrete e 5¾ x 8 x 12 in. f 8 x 4 x 16. g F.o.b. truck at job. i Less 2% for cash. j Less 1% for cash. k 8x8x18. l F.o.b. plant San Rafael.
READY MIXED CONCRETE: a 5 cu. yds. or over del. Man. b 25 cu. yds. or more. c 10–100 cu. brackets. e 2,000 lb. concr. f 2500 lb. comp. g Aver. haul 7–9 mi. zone. h Less 50¢ for cash. i 5% off for cash. j 2% off for cash. k Sales tax included. l 1:2½:4. m F.o.b. yard. n Plus escalator clause.

CASH DISCOUNTS CEMENT to Contractors: Truck delivery, 2% for cash on 10th of month; on carload deliveries, no trucking, same as dealer cash discount 10c. per bbl. for payment within 15 days of date of invoice. Subject discount 10c. per bbl. 20 days in Montreal.

CURRENT MAXIMUM PRICES AT CEMENT MILLS

Charge for bags not included. For paper bags add 30¢ per bbl., not refundable

	Bulk		Bulk		Bulk		Bulk		Bulk
Richard City, Tenn	$2.60†	Buffington, Ind.	$2.55†	Steelton, Minn	$2.65†	Muskegon, Mich	$2.70†	Toledo, O	$2.60†
Clinchfield, Ga	2.60†	Independence, Kan	2.50†	Leeds, Ala	2.45†	Saginaw, Mich	2.60†	Milwaukee, Wis	2.75†
Kingsport, Tenn	2.60†	Hannibal, Mo	2.55†	Duluth Minn	2.65†	Wyandotte, Mich	2.60†	Green Bay, Wis	2.75†
West Des Moines, Iowa	2.65†	Northampton, Pa	2.60†	Hudson N. Y	2.60†	Buffalo, N. Y	2.60†	Ironton, O	2.60†
Nazareth Pa	2.60†	Universal, Pa	2.65†	Alpena, Mich	2.50†	Oswego, N. Y	2.75†	Montreal City	2.31
Bath, Pa	2.60†	Waco, Tex. (+ 10¢ tax)	2.50†	Detroit, Mich	2.60†	Cleveland, O	2.60†	W. Winfield, Pa	2.65†

† Prices to hold for fourth quarter of 1951.

PAVING BRICK, BLOCK, ASPHALT, ROAD OILS—F. O. B. CITY

	PAVING BRICK AND BLOCK			PAVING ASPHALT Per ton, less than 80 penetration		ASPHALT BINDERS—FLUXES Per gal., 80–300 penetration		CUTBACK ASPHALT Per ton		ROAD OIL Per gal.	ASPHALT EMULSION (Quick-breaking) Per gal.	
	Granite Per M lots of 50,000 4x4x8 in.	Brick per M 3x4x8½ in. carload lots	Wood per sq. yd. 3½ in. 16-lb. treat	Tank car	Drums	Tank car	Drums	Tank car	Drums	Tank car	Tank car	Drums
Atlanta	$73.00	$35.00	$2.25	$26.00	$32.25	$19.75v	$33.90v	$0.095	$0.185	$0.105	$0.115	$0.225
Baltimore	150.00‡	57.70‡	.....	22.00	.....	.0809	0.15	.09w	.17w	.09i	.09	0.12
Birmingham	......	45.50i	.....	......	.....	.....	.....	......	......	......	......	......
Boston	......	......	.....	24.50a	35.50a	22.00r	35.50r	.105a	.22	.09a	.105	.22
Chicago	155.00‡	90.00‡b	4.40/4.60‡f	20.25b	30.25b	19.25bv	29.25bv	.0875bw	.16w	.075b	.....	.....
Cincinnati	....	.....	.....	.....	...	.....	.....	.....	.....	.....	.....	....
Cleveland	200.00	55.90d	4.12g	23.00[A]	....	23.00[A]	....	1025[A]w	.19[A]w	.....	.11[A]	.19[A]
Dallas	e	40.00	e	23.95	42.99	.1012	.1898	26.99	47.77	.0987	.1962	.1423
Denver	.....	48.00	.....	.....	....	.....	..	.....	.....	.....	.....	.....
Detroit	.....	92.00	.. ..	26.45	....	26.45v	.....	.117w	.....	.0925	.....	.2166
Kansas City	e	e	e	18.55cl	...	.....	.....	.0725cw	.....	.0635c	.....	.....
Los Angeles	e	.....	e	15.50dmx	....	15.50dvx	....	17.00dx	.....	16.00dv	.0825j	.1525j
Minneapolis	.....	.....	2.83h	23.90	....	22.90	.....	.0994w	.....	.0894	.1035	.....
Montreal	137.00	e	e	27.00n	36.65n	.135n	.183n	16.30nu	18.80nu	.132n	.187ns	.229ns
New Orleans	.....	.....	.....	17.50s	...o	17.50ev	.....o	.085ew	.....o	.0882	.085	....
New York	.....	.....	3.12f	26.26	47.59	25.26v	46.58v	.1071w	.1971w	.1071	.1072	.1993g
Philadelphia	175.00	110.00	4.06	22.00	....	.....	.....	.095w	.....	.....	.....	.....
Pittsburgh	165.00	48.00	4.60	23.00	37.00	.10	.20	27.00	39.00	.095	.09	.20
St. Louis	.....	.....	.....	19.25f	....	.1698	.....	.0865 .089w	.....	.15	.....	.....
San Francisco	.....	.....	.....	17.00g	32.50gp	17.00gkv	32.50g	19.00g	36.50g	17.50v	.085y	.....
Seattle	.....	.....	.....	17.00h	37.50h	16.25hv	.....	19.50h	.....	18.50hv	.095h	.105h

‡ Delivered.
PAVING BRICK & BLOCK: a CL. b 3½ x 4 x 8½. c 2½ x 8½ x 4. d LCL, truck deliveries. e Not used. f 2" interior 6¢ treat. g 3". h 8¢ treat. i 3 x 3⅝ x 8½.
ASPHALTS: a Price at plant, Everett, Mass. b F.o.b. refinery, Lockport, Ill. c F.o.b. Sugar Creek, Mo. d F.o.b. refinery, El Segunda. e F.o.b. Baton Rouge. f F.o.b. Wood River or Roxana, Ill. g F.o.b. Richmond, Calif. h F.o.b. Martinez. i Bulk refinery. j F.o.b. refinery, Inglewood, Calif. k 50–110 penetr. l Less than 100 penetr. m 40–80 penetr. n Tax incl. o Drums not avail. p Shipped in steel bbl. r In customer's drums. s Shipped in drums, per drum. u Per 100 gal. v Per ton. w Per gal. x Also tank trucks. y F.o.b. Oakland. [A] F.o.b. refinery Cleveland.

IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES—	PLATE CARBON STEEL	REINF BARS billet	RIVETS ½-in. structural	SHEET PILING Base	STEEL RAILS Per Net Ton Standard	Light	Re-rolled	TRACK SUPPLIES Angle Bars	Std Spikes	Tie Plates	Track Bolts
Birmingham Area	$3.65	$3.70	$3.70	$7.85	....	$72.00	$80.00	Not avail-	$4.70	$6.15	$4.50	....
Chicago Area	3.65	3.70	3.70	7.85	$4.45	72.00	80.00	able	4.70	6.15	4.50	....
Pittsburgh Area	3.65	3.70	3.70	7.85	4.45	72.00	80.00		4.70	6.15	4.50	....
Buffalo Area	3.70	3.70	3.70	7.75	4.45	72.00	80.00	....	4.70	6.15	4.50	$9.85
Cleveland	....	....	3.70	7.85	....	......	......	....	....	....	....	9.85
Youngstown Area	....	....	3.70	....	....	......	......	....	....	6.15	....	....
Geneva	3.65	3.70	....	....	....	......	......	....	....	....	....	....
Los Angeles	....	....	4.40	....	....	......	......	....	....	6.15	....	....
Pueblo	3.65	3.70	3.70	....	....	72.00	80.00	....	4.70	6.15	4.50	9.85

IRON AND STEEL PRODUCTS—F. O. B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	REINFORCING BARS Per 100 lb., base price *u* 5 tons to carload lot *b* New billet	Rail steel	Add switch	$/cwt for Del.	EXPANDED METAL LATH*k* Per 100 sq. yd., carload lots Std. diamond mesh, 3.4 lb.	Std. ribbed 3.4 lb.	WELDED FABRIC REINFORCING*d* Per 100 sq. ft., carload lots 4x16 in., No. 5 & 10 wires	4x12 in., No. 8 & 12 wires	6x6 in., No. 6 & 6 wires
Atlanta	$6.80	$6.65	$6.65	$.025	$.10	$31.50	$31.50	A.P.M.* Joliet, Illinois, Donora, Penn., $2.66 F.o.b. Mill: Monessen, Penn., $2.76	A.P.M.* Joliet, Illinois, Donora, Penn., $1.87 F.o.b. Mill: Monessen, Penn., $1.93	A.P.M.* Joliet, Illinois, Donora, Penn., $2.79 F.o.b. Mill: Monessen, Penn., $2.89
Baltimore	6.54	5.49*l*	....	....	.10	42.00	45.00			
Birmingham	5.70	5.75	5.75	.05	.15	47.00*p*	52.00*p*			
Boston	6.20*ak*	6.19*ck*	6.19*ck*	....	.15	40.50	44.50			
Chicago	5.70	4.95*ff*	4.95*ff*	.0625	....	34.50‡	38.50‡			
Cincinnati	6.24*ak*	5.84*r*	....	....	....	38.50*szee*	41.50*szee*			
Cleveland	5.82	4.81*r*	....	....	.10	37.00‡	40.00‡			
Dallas	8.85	7.00	7.00	....	....	49.00	52.00			
Denver	7.20	7.10*e*	....	....	....	60.00*s*	72.00*qs*			
Detroit	6.09	5.74*n*	....	....	.20	53.00	58.00			
Kansas City	6.30*nn*	5.90#	....	....	....	39.50	41.50			
Los Angeles	6.45*fhh*	6.15*g*	....	....	.15	48.00	54.00*kk*			
Minneapolis	6.16*hh*	7.12*ll*	7.12*ll*	....	.30	37.00	40.00			
Montreal	6.55*iB* 6.75*A*	4.75*i*	4.75*g*	....	....	57.00*h*	59.00*h*			
New Orleans	....	5.55*ak*	....	.05	.10	40.00	40.00			
New York	6.30*r*	6.25	6.25	....	.30	38.50*st*	45.00*st*			
Philadelphia	5.90*k*	5.95*k*	....	....	....	38.00‡	42.00‡			
Pittsburgh	5.40/5.60	5.40/5.60	....	....	.10	34.00	36.00			
St. Louis	6.03*a*	5.34*c*	5.34*c*	....	....	47.00*aa*	53.00*aa*			
San Francisco	7.15*ii*	6.50	....	....	.15	40.50	43.50			
Seattle	4.30*e*	5.55*d*	....	....	....	57.00*smm*	47.00*smmx*			

* At Producing Mill.

‡ Delivered. *b* 1–5 tons, add 35¢. Less than 1 ton, add 50¢. *c* 20 tons or over base. *d* Mill price plus freight. *e* F.o.b. plant. *f* Includes delivery in free delivery zone. *g* 10,000 to 39,999 lbs. *h* List price. Dominion tax exempt. Provincial and Municipal tax extra. *i* Plus Dominion, Provincial and Municipal sales tax. *j* Price per ton. *k* F.o.b. city. *l* Intermediate and hard grade, new billet. *m* Per sq.yd. *n* 5–10 tons. *o* 5 to 15 tons base. *p* Del. of 500 sq. yd. or more. *q* Std. ribbed. 4 lb. per sq. yd. *r* 5 tons or over. *s* LCL. *t* Asphalt coated. *u* Note: Revised size extra — 1 in., 1¼ in., 1½ in., 10¢. ⅞ in., ¾ in., 15¢. ⅝ in., 25¢. ½ in., 50¢. ⅜ in. 80¢. ¼ in. $1.90. *v* 20 tons. Straight. *w* Copper bearing. *x* 2.5 lb. per sq. yd. *y* $0.0093 transportation tax included. *z* Copper alloy. *aa* Delivered truck to job. Contractor to do unloading. *dd* F.o.b. dock. *ee* F.o.b. cars. *ff* Carload lots. *gg* Including sales. *hh* 10,000–19,999 lbs. *ii* Rolled at Geneva mill. 400–999 lbs. *kk* ⅜" ribbed. *ll* 5 to 8 tons, f.o.b. city. *mm* 2% off for cash. *nn* 1–5 tons. # 10 tons to CL. *a* 20 0–9999 lbs. *A*. Amer. struct'l shapes. *B*. Canadian shapes.

PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

	C. I. PIPE Per net ton f.o.b. 6 in. to 24 in.*a*	VITRIFIED SEWER PIPE Per foot, Delivered ASTM C13-44T std. 8 in. s.s.	std. 12 in. s.s.	24 in. ds.	36 in. ds.	CLAY DRAIN TILE ASTM C4-24 Per 1,000 ft., carload lots, f.o.b. 6 in.	8 in.	CONCRETE SEWER PIPE Per ft., delivered: ASTMC 14-41 12 in.	24 in.
Atlanta	$99.00	$0.43	$0.67	$3.39*gg*	$7.00*gg*	$114.00	$140.00	$0.45	$2.00
Baltimore	109.00	.539	1.0395	4.234	11.275*A*	178.20	274.80	.90	2.45
Birmingham	93.00	.42	.75	2.99	....	210.00‡	375.00‡	1.25*m*	2.75*m*
Boston	113.00	.532*uvx*	1.08*uvy*	4.41*uvy*	11.685*uvy*	187.80*r*	289.20*r*	1.55*mg*	3.80*mg*
Chicago	107.00	.65	1.25	5.10	13.50	150.00‡	270.00‡	.80	2.80
Cincinnati	106.00	.574	1.107	4.32	11.38	154.80	239.70	.75*m*	2.80*m*
Cleveland	108.00	.462*x*	.89*x*	3.69*x*	10.045*x*	158.00*m*	245.65*m*	.80*m*	3.00*m*
Dallas	107.00	.436	.822	3.234*b*	9.17*b*	......	......	.49	1.60
Denver	115.00	.43*dd*	.74*dd*	3.18*dd*	....	......	......	.74*m*	2.50*m*
Detroit	108.00	.70	1.35	5.35	14.40	240.00*m*	360.00*m*	.80	3.20
Kansas City	106.00	.50	.88	3.50	....	216.70	......	.70	3.00*g*
Los Angeles	122.00	.54*l*	1.07*l*	5.24*l*	13.06*l*	228.20	348.90	.85	2.40*ff*
Minneapolis	112.00	66*mo*	1.20*mo*	4.85*mo*	....	......	......	1.36*h*	3.87*h*
Montreal	100.00	85*z*	1.50*z*	5.25*z*	....	......	......	106.50*jkaa*	282.70*jkhaa*
New Orleans	101.50	.498	.905	5.03	....	229.70*bb*	402.00*bb*	.65	2.29
New York	111.00	62	1.19	4.73	12.40	......	......	1.15	2.50
Philadelphia	110.00	65	1.25	4.95*A*	12.65*A*	300.00‡	350.00‡	1.55*h*	3.75*h*
Pittsburgh	109.00	.386*m*	.752*m*	2.83*m*	7.622*m*	147.50	230.00	1.05*h*	2.50*h*
St. Louis	103.00	51	.93	3.65	8.50	180.00	400.00	1.20*il*	2.85*hl*
San Francisco	122.00	.61*d*	1.20*d*	5.03*d*	12.57*d*	240.00*dl*	400.00*dl*	.95	3.20
Seattle	124.00	.51*b*	.91*b*	....	..	150.00*c*	......	.88*ee*	2.64*ee*

‡ Delivered. *a* Class B & heavier. Based on existing freight rates; subject to rate change. Gas pipe and class A, $5 per ton additional. 4 in., $7 per ton additional. 30 in. and larger, usually, $1 per ton less. *b* Extra strength ASTM C 200-44T. *c* 4-in., $90. *d* SS361-A. *e* 30-in. *g* Culvert pipe. Reinforced, ASTM C76-41. *h* Reinforced, ASTM C75-41. *i* Reinforced, ASTM C76-37. *j* Centrispun. *k* Per 100 ft. *l* F.o.b. plant. *m* Truck delivery. *o* Listed price is based on LCL (no minimum). *p* Less than 5 tons, per price per ft. *t* Within switching limits. *u* ASTM C13-40. *v* C.L. f.o.b. origin, freight allowed. *x* 2 ft. lengths. *y* 3 ft. lengths. *z* CESA A 60-1941 specifications used. *aa* No. standard specifications in Can. *bb* Freight allowed to destination in city. *cc* Truck loads; f.o.b. plant, Newton. *dd* LCL, delivered, f.o.b. truck. *ee* 1% off for cash. *ff* 21". *gg* Extra strength ASTM C-200-50. *A* Standard strength.

***WROUGHT STEEL PIPE**

(Full standard weight)

Mill	2½ & 3 in., Butt Weld† Black %	Galv. %	3½ to 6 in., Lap Weld† Black %	Galv. %
Lorain, Ohio	43.5	24.0	....	....
Aliquippa, Pa.	43.5	22.5	36.5*a*	15.5*a*
Sparrows Pt., Md.	41.5	22.0	33.5*a*	13.5*a*
Benwood, W. Va.	43.5	24.0	38.0*c*	18.0*c*
Youngstown, O.	43.5	24.0	....	....
Indiana Harbor, Ind.	42.5	23.0	35.5*a*	15.5*a*
Sharon, Pa.	43.5	22.0	....	....
Wheatland, Pa.	43.5	22.5	38.5*a*	17.5*a*
Etna, Pa.	43.5*b*	24.0*b*	38.0*cb*	18.0*cb*
Fontana, Calif.	32.0*b*	18.5*b*	24.0*ab*	10.0*ab*

† Threaded and coupled. *a* 3½ to 4 in. *b* Continuous weld. *c* 5 and 6 in.

* WROUGHT STEEL PIPE: Discounts from standard list consumers carload prices. Base price approx. $200 per net ton. List prices per ft.: *Butt Weld:* ⅛ in., 5½¢; ¼ in., 6¢; ⅜ in., 6¢; ½ in., 8½¢; ¾ in., 11½¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 76½¢. *Lap Weld:* 3½ in., 92¢; 4 in., $1.09, 5 in., $1.48; 6 in., $1.92. Freight rates to destination to be added to price plus 3 percent tax on transportation.

WROUGHT IRON PIPE: List prices per ft. same as wrought steelpipe. Discount for Pittsburgh base. *Butt Weld* — 1 in. and 1¼ in. black, + 20.0, galv. + 48.0; 1½ in. black, + 14.0 galv. + 44.5; 2 in. black, 4 galv. + 34.5. *Lap Weld* — 2½ in. to 3½ in. black + 20.5, galv. + 47.5; 4½ in. to 8 in. black + 17.5, galv. + 43.0. Freight rates to destination to be added to name delivered price.

LUMBER, TIMBER, PLYWOOD—PER M FT., B.M., CARLOAD LOTS F.O.B.

SHORT LEAF YELLOW PINE AND DOUGLAS FIR

All S. L. Y. P. is No. 2 common or better and for No. 1 N. C. Box. (Prices in Bold Face)
All Fir boards, dimensions, planks No. 2. Fir small timbers and timbers are No. 1 Lengths up to 20 ft.
(*Prices in italics*)

LONG LEAF Y. P. Merchantable grade up to 20 ft.

PLYWOOD Rail freight increment (See note for base *price*)

		1x6 s4s	1x8 s4s	2x4 s4s	2x6 s4s	2x8 s4s	2x10 s4s	3x12 Rgh	6x12 Rgh	12x12 Rgh	Long Leaf Y. P. 2x12 Rgh	Long Leaf Y. P. 12x12 Rgh	Plywood ⅝"	Plywood ¾"
Atlanta	†	**$73.00**	**$76.00**	**$67.00**	**$69.00**	**$73.00**	**$76.00**	**$75.00**	......	......	......	......	$22.32	$27.24
Baltimore	*	**90.00**	**103.00**	**80.00**	**85.00**	**85.00**	**90.00**	**115.00**	......	......	**$148.00**	**$152.00**	22.86	27.90
		104.50g	*104.50g*	*103.50g*	*103.50g*	*103.50g*	*102.50g*	*114.50*	*$108.50*	*$108.50*	......	......		
Birmingham	†	**83.00**	**83.00**	**70.00**	**80.00**	**83.00**	**85.00**	**95.00**	......	......	**115.00**	**130.00**	21.78	26.58
		85.00	*85.00*	*75.00*	*80.00*	*80.00*	*79.00*	*85.00*	*85.00*	*85.00*	......	......		
Boston		**96.00a**	**100.00a**	**97.00a**	**98.00a**	**103/106a**	**110.00a**	......	......	......	......	......	22.86	27.90
	2	*92.50*	*92.50*	*105/110*	*110.00*	*108/112*	*108/112*	*126.00*	*126.00*	*126.00*	......	......		
Chicago	**	**96.00**	**100.00**	**95.00**	**96.00**	**96.00**	**100.00**	**105.00**	......	......	**134.00**	**134.00**	18.72	22.80
		103.00	*103.00*	*98.00*	*106.00*	*106.00*	*106.00*	*110.00*	*110.00*	*110.00*	......	......		
Cincinnati	*	**94.00**	**96.00**	**84.00**	**89.00**	**94.00**	**96.00**	**118.00**	......	......	**125.00**	**125.00**	21.78	26.58
		112.00	*112.00*	*114.00*	*114.00*	*114.00*	*114.00*	*130.00*	*125.00*	*125.00*	......	......		
Cleveland	**	**95.00**	**99.00**	**90.00A**	**95.00**	**95.00**	**97.00**	*120.00*	*120.00*	*120.00*	......	......	22.20	27.12
Dallas	k†	**78.00**	**80.00**	**69.00**	**58.00**	**59.00**	**59.00**	**98.00**	......	......	**108.00**	**98.00**	18.72	22.80
Denver	*	*Not in stock*		*125.00*	*127.00*	*128.00*	*135.00*	*137.00*	*156.00*	*156.00*	......	......	13.92	16.98
Detroit	‡	**106.00**	**110.00**	**100.00**	**107.00**	**111.00**	**113.00**	......	......	......	......	......	21.78	26.58
		99.75	*100.75*	*105.75*	*106.50*	*105.50*	*104.00*	*120.00*	*120.00*	*120.00*	......	......		
Kansas City	*	**120.00**	**120.00**	**120.00**	**120.00**	**120.00**	**120.00**	......	......	......	......	......	16.56	20.16
		120.00	*120.00*	*120.00*	*120.00*	*120.00*	*120.00*	*145.00*	*155.00*	*155.00*	......	......		
Los Angeles	1	*93.00*	*93.00*	*94.00*	*92.00*	*92.00*	*92.00*	*115.00*	*125.00*	*115.00*	......	......	13.38ab	16.26ab
Minneapolis	#	*130.00*	*130.00*	*135.00*	*135.00*	*135.00*	*135.00*	*150.00*	*150.00*	*150.00*	......	......	16.56	20.16
Montreal	ab	98.00	110.00	95.00	100.00	110.00	125.00	......	......	......	......	......	.....	.....
		175.00	*175.00*	*175.00*	*175.00*	*175.00*	*175.00*	*175.00*	*175.00*	*170.00*	......	......		
New Orleans	†	**100.00**	**100.00**	**92.00**	**85.00**	**90.00**	**94.00**	**118.00**	......	......	**148.00**	**140.00**	18.72	22.80
	†	*100.00*	*102.00*	*102.50*	*103.00*	*102.00*	*99.50*	*113.00*	*117.00*	*112.00*	......	......		
New York	3	**105/110**	**110/115**	**100/105**	**107^{50}/112^{50}**	**112^{50}/117^{50}**	**117^{50}/122^{50}**	**150/160**	......	......	**210/240**	**210/240**	22.86	27.90
		......	......	*Range from $120.00 to $125.00*				*135/150*	*145/150*	*145/150*	......	......	.....	.....
New York	**	**95.00**	**100.00**	**79.00**	**92.00**	**97.00**	**99.00**	**120.00**	......	......	......	......	....	.....
		100.00	*100.00*	*110.00*	*110.00*	*110.00*	*110.00*	*115.00*	*130.00*	*130.00*				
Philadelphia				**Range from $117.00 to $127.00**				**117/127**	......	......	**190/200**	**190/200**	22.86	27.90
				Range from $130.00 to $140.00				*130/140*	*140/150*	*140/150*				
Pittsburgh	†			**Range from $90.00 to $95.00**			**100/110**	**100/110**	......	......	**100/110**	**115/125**	22.56	27.48
				Range from $100.00 to $110.00			*100/110*	*110/115*	*145/155*	*145/155*	......	......		
St Louis	#c	**112.00e**	**117.50e**	**93.50d**	**107.75d**	**112.25l**	**125.00d**	......	......	......	......	......	18.72	22.80
		......	......	*115.50e*	*126.00e*	*126.00e*	*126.50e*	*155.00e*	*160.00*	*160.00*	......	......		
San Francisco	A†	*65.00*	*65.00*	*77/78*	*76.00*	*75.00*	*73.00*	*72.00*	*80.00*	*80.00*	......	......	10.08a	12.30a
Seattle	†	*82.50g*	*82.50g*	*82.50g*	*82.50g*	*82.50g*	*82.50g*	*82.50g*	*82.50g*	*82.50g*	......	......	.....	.....

† F.o.b. mill. * F.o.b. city, CL, out of yard. ** F.o.b. city, CL, direct mill shipment. ‡ Deliv. to contr. CL. 1. Retail, LCL, at yard. # Retail, LCL, deliv. 2. Deliv. truck lots. 3. asd.

LUMBER: **Bold Face type, Southern Pine.** *Italics. Douglas Fir.* *a* Spruce *b* Tax exempt. *c* 5M lots. *d* 8–12 ft. lengths. *e* 8–16 ft. lengths. *f* 18 ft. or under. *g* No. 1 common. *i* 8 ft. lengths. *k* No. 3 common *l* 8–10 ft. lengths. *A* Correction: Sept. 85.00. *A* Rail freight rate from Northwest mills to San Francisco are $11.50 to $15.00 per M ft bm. From Northern Calif. mills $9.00 by rail $12.00 by truck to yard with surfaced stock $2.00 to $3.00 less.

PLYWOOD: Special concrete form grade Fir Plywood, 4′ by 8′ panels, 5-ply, sanded 2 sides, water resistant glue, carload lots, delivered per 1,000 sq. ft. surface. Seattle base price on ⅝", $204.00; on ¾", $231.00. For other centers add rail freight increment from table on proper size. Oiling and edge sealing charges included. *a* Lower rate by water shipment. *b* 50,000 lb. minimum.
* Freight rate increase of 6¢ per cwt., not included in these figures.

GLASS, EXPLOSIVES, CHEMICALS

	WINDOW GLASS Discounts from jobbers list, Feb. 1, 1950*a* Single or Double Thickness A quality	 B quality *j*	EXPLOSIVES Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 200 lb. lots*
Atlanta	79%	80%	$0.2275
Baltimore	70–10%	78–10%	.2275
Birmingham	83%	83%	.1750
Boston	79–10%	79–10%	.2275
Chicago	78%*f*	78%*f*	.2275
Cincinnati	78%	78%	.2275
Cleveland	78–10–10%*f*	78–10–10*f*	.2675
Dallas	75%	75%	.2350
Denver	81–5%	81–5%	.2325
Detroit	78–10–10%	78–10–10%	.2275
Kansas City	80–10%	80–10%	.2325
Los Angeles	75%	80%	.23
Minneapolis	78–10%	78–10%	.2325
Montreal	45–15%*bc*	45–15%*bc*	20.00*hi*
New Orleans	78%	77%	.2325
New York	82%*f*	82%*f*	.38*g*
Philadelphia	76%	78%	.2275
Pittsburgh	82%	82%	.20
St. Louis	80–10%	80–10%	.2325
San Francisco	70%	76%	.2275
Seattle	75%	78%	.23

Price of 60% Ammonia Gelatin is $0.0125 per lb. higher than 40%

Glass; a Jobbers' list price per box, 14 x 20, ss, $42.75 for A quality, $37.50 for B quality; 14 x 20, ds, $60.00 for A quality, $52.75 for B quality. *b* Discount from list, Apr. 1951; sales tax included, but 6% tax exemption not allowable for. *c* Single thickness. *f* Disc from Oct. 1950.

Explosives; * Urban prices influenced by service charges or local storage and delivery regulations do not consistently reflect quantity prices in less congested areas. *g* In borough of Kings, Queens, and Richmond and in Manhattan south of Canal St., add delivery charge of $9.00 per trip. *h* F.o.b. city per 100 lb. forcite, 40%. Forcite 60%, $21.75. *i* F.o.b. Beloeil (near Montreal).

40% Ammonia Gelatin price ranges in other than urban areas, per lb. (except Seismograph Grades)

	C/L 20,000 lb. net	Tons	200 lb. lots
E. of the Miss., except Fla. and Me.	$0.175	$0.2075	$0.2275
W. of Miss. to Rocky Mtn. States, Fla. and Maine	.18 –.1875	.2125–.22	.2325–.24
Rocky Mtn. States	.18 –.1925	.2125–.22	.2325–.245
Pacific N. W. States	.1775–.19	.21 –.2225	.23 –.2425
Pacific S. W. States	.175 –.1825	.2075–.21	.2275–.2325

PILES, TIES F.O.B.

PILES

Prices per linear foot, fir and pine, bark off, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine based on freight from Norfolk.

			By Rail	
Dimensions	Points	Length	Pine*	Fir
12-in. at butt	6-in.	30 to 50-ft.	$0.43	....
12-in.— 2-ft. from butt	6-in.	50 to 59-ft.	.46	....
12-in.— 2-ft. from butt	6-in.	60 to 69-ft.	.50	..
12-in.— 2-ft. from butt	6-in.	90 to 100-ft.	....	....
13-in.— 3-ft. from butt	5-in.	91 to 100-ft.	....	....
14-in.— 2-ft. from butt	6-in.	50 to 69-ft.	.50/.60	....
14-in.— 2-ft. from butt	6-in.	70 to 79-ft.	.70/.75	.85
14-in.— 2-ft. from butt	5-in.	80 to 85-ft.	.75/.85	.86
14-in.— 2-ft. from butt	5-in.	85 to 89-ft.	....	.92
14-in.— 2-ft. from butt	5-in.	90 to 100-ft.	....	.94

* Pine piling over 80-ft. available only in limited quantities.

RAILWAY TIES

Prices f.o.b. per tie for carload lots:		6"x8"x8′		7"x9"x8′6"	
		Untr.	Tr.	Untr.	Tr.
Boston	Oak *i*	....	...	....	...
	Pine *i*	....	...	....	....
New York	S. L. Sap Pine	$2.10	$3.90	$3.00	$5.00
	Mixed Oak	2.65	4.20	3.25	5.50
Birmingham	Hardwood	2.00	3.13*a*	2.68	4.16*a*
Chicago	Red Oak	...	4.00*a*	....	5.00*a*
Los Angeles	Douglas Fir	....	....	....	....
	Redwood	....	....	....	....
Philadelphia	Red Oak	2.15/2.33	3.10/3.13*a*	3.00/3.10	4.15/4.25*a*
St. Louis	White Oak	2.90	....	3.60	....
	Red Oak	2.80	3.45*a*	3.48	4.45*a*
	Sap Pine or Cypress	3.28*a*	....	4.20	....
San Francisco	Douglas Fir	2.31*e*	3.35*ef*	3.03*bf*	4.40*ea,*
Montreal	Birch or Maple	....*h*	....*h*	....*h*	....*h*

Tr.— Treated; Untr.— Untreated. *a* Creosoted. *b* 7" x 9" x 8′. *c* Empty cell. *e* Green. *f* F.o.b. cars. *h* No constant price available. *i* Not available.

CHEMICALS

Water, sewage treatment, road work, f.o.b. carlots, New York

Bleaching powder in drums f.o.b. works, per 100 lb	$6.00
Chlorine cylinders, liquid, per lb. f.o.b. works	.0875
Calcium chloride, 77–80%, flaked, 100-lb. paper bag, f.o.b works, ton	25.00
Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb	2.20
Soda ash, 58%, in paper bags, per 100 lb. dense	1.60
Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works	1.65
Sulphate of copper, in bags, 99% per 100 lb. f.o.b. works	8.95

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION — SCORED Per M. lots of 2,000 pieces or over. 3x12x12 in.	4x12x12 in.	8x12x12 in.	STRUCTURAL CLAY TILE — LOAD BEARING — SCORED Per M. lots of 2,000 pieces or over, 8x12x12 in.	10x12x12 in.	12x12x12 in.	BRICK Per M. in quantity Common backing	Straight hard	LIME Per ton, In paper, Carload lot, Hydrated finishing	Common hydrated	Pulverized, or lump
Atlanta	......	......	......	......	......	......	$27.78	$27.78	$19.00	$17.50	$17.50
Baltimore	$180.00	$191.00	$358.00	$406.00	$530.00	$605.00	37.00k	42.00k	30.00	20.60	....
Birmingham	118.00p	128.00p	236.00p	283.00p	......	......	23.50ff	28.50gg	26.37	17.10	..
Boston	191.65†	204.40†	383.25†	383.25†	......	......	33.50p	36.50p	30.00†	28.00†	..
Chicago	135.00	145.00	280.00	......	......	......	21.00	23.00	30.80	26.00	.....
Cincinnati	185.00j	195.00j	340.00jdd	......	......	......	34.00j	46.00j	26.00j	24.25j	.....
Cleveland	149.00**	156.00**		......	......	......	32.00	32.00	25.50	23.50	31.00ee
Dallas		118.00		......	......	......	19.75	35.25	32.00	21.80	.....
Denver	......	......	......	......	......	......	34.00	40.00	34.80bb	28.00bb	34.00bb
Detroit	Detroit plant closed			......	......	......	34.00cc	32.50cc	32.00	32.00	.....
Kansas City	115.50	122.50	245.00	245.00	303.50	367.00	26.00o	26.00o	30.50	24.50	27.00
Los Angeles	r	r	r	r	r	r	21.00§	.....	34.00	34.00	35.00
Minneapolis	171.50p	192.50p	386.00p	192.50wp	......	......	32.00rp	36.00	37.00bbe	28.00bbe	38.00bbde
Montreal	150.00aq	162.50au	300.00au	......	......	......	26.50	38.50	34.80	32.50	24.60u
New Orleans	170.00	170.00	310.00	......	......	......	31.00	.....	.....	20.00	20.00
New York	121.60hA	129.70hA	178.30chA	194.60hnA	......	......	38.50	.....	38.00	32.00	.....
Philadelphia	126.30	134.80	252.60	302.74	361.35	455.74	29.00	32.00	36.00	21.50	.....
Pittsburgh	112.00	117.00	189.00	216.00	279.00	317.00	32.00	42.00y	25.00	23.00	2.97m
St. Louis	136.00cc	156.00cc	307.50cc	307.50cc	345.00cc	......	40.00sl	36.25sl	.85saa	.65saa	1.10aaspee
San Francisco	156.85a*	177.10a*	235.30dda*	......	......	......	37.00	.....	26.35	26.35	2.62m
Seattle	175.00cc	190.00cc	......	190.00ccw	......	......	39.00s	40.00s	37.50shh	1.50#	3.90mhh

† F.o.b. yard Roxbury. a Smooth. b Per 50 lb. bags. c 6 x 12 x 12 in.-3 cell. d Pulverized hot. e 5%, 10th following month. g 5¾ x 8 x 12. h F.o.b. trucks, job site N.Y.C. j Truck load or over. k $1.00 discount l Red face. m Per bbl., 180 lb. n 7¼ x 7¼ x 12. Speed title. o F.o.b Buffalo. p Truck lots. ? Provincial and Municipal tax extra. r No used because of earthquake danger. s 2% discount for cash. t 5½ x 8 x 11½ u Tax exempt. v Sand lime. w 5 x 8 x 12. y Stacked. z Pebble lime price per 80 lb. sack. aa Price per sack. Lime not sold per ton. bb LCL. cc Truck delivery. dd 6 x 12 x 12. ee Pebble lime. ff 80% common. gg Select. hh LCL. § F.o.b. plant. # Per 60 lb. sack, no incr., ton price no longer quoted. ** Only 1 plant producing, quotes on warehouse delivery, previous quotes were truck deliv. *F.o.b. Stockton. A. Subj. to incr. not in excess of 10%.

PAINT, ROOFING—F.O.B. CARLOAD LOTS

	RED LEAD Per 100 lb. in 600-lb. (Approx.) bbl. Dry a	WHITE LEAD Per 100 lb. in 100 lb. cases in oil w	READY-MIXED PAINT Per gal., drums Graphite b	Aluminum c	Ferric Oxide d	ROOFING SUPPLIES Carload lots f.o.b. factory Rolls, slate surfaced, 85–90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 360 lb. bbl. per ton
Atlanta	$20.75	$31.025	$1.75	$2.70	$1.65	$2.06‡	$2.06‡	$2.06‡	$1.00‡	$36.00‡
Baltimore	20.50	30.65	2.65	4.10	3.22	2.50	4.17	4.17	.42	37.00
Birmingham	20.75	31.025	3.90	3.40	....	2.80	2.75	2.75	....	40.50ee
Boston	20.50	30.65	....	....	....	2.89q	2.79o	2.79o	.47	42.00
Chicago	20.50	30.65	..	....	....	2.73‡u	3.04‡o	3.04‡o	38.00‡bbr	43.00‡
Cincinnati	20.50	30.65		....	....	2.50	2.50	2.50	.42y	42.36
Cleveland	20.50	30.65	2.94pggA	3.37ggB	2.80C	2.50q	2.50o	2.50o	.36ff	40.00hh
Dallas	20.75	31.40	....	4.05	....	3.50q	3.75o	4.35o	.36	46.00
Denver	21.00	31.15	3.07	5.15	2.87	3.25o	2.76o	2.76o	.47ff	42.00
Detroit	20.50	30.65	2.35	3.40	2.50	2.50	2.50f	2.50	.51	40.00
Kansas City	20.50	30.77	....	2.71	2.65	2.39	2.43o	2.43o	.313	48.00
Los Angeles	20.50	30.90	3.30	4.50	4.20	2.97	2.01e	l	.44	l
Minneapolis	20.50	28.55/30.77	....	....	....	2.50idd	2.50hidd	2.50hidd	.34idd	37.00r
Montreal	....	20.70	3.75t	4.20t	4.62t	3.80t	3.85tf	3.85tf	3.00kt	3.15kt
New York	20.50	30.65	3.45y	....	....	2.50	2.50o	2.50o	.34z	37.00
Philadelphia	20.50	30.65	3.25	3.65	3.15	2.54	2.94	2.94	.37	26.00
Pittsburgh	20.50	30.65	2.45	2.55	2.20	2.90	2.90o	2.90o	.39	42.00
St. Louis	20.50	30.65	....	....	....	2.50	2.50h	2.50h	.37y	38.00
San Francisco	20.50	30.90	2.40	3.40	....	2.95	4.00aa	....	.49	.....
Seattle	20.50	31.15	2.51m	2.67m	..	3.58mqcc	3.05hmcc	....	.59mcc	52.00jmc

‡ Delivered. Note: Red lead in oil 50c higher than white lead in oil. a Red lead prices change frequently due to pig lead price changes. b U. S. War Dept. Spec. 3-49A. c ASTM Spec. D266-31. d 80% minimum ferric oxide. e 15 lb. f Per 432 sq. ft. h Per roll. 65 lb. i Net carload lot prices; Minneapolis and vicinity. j Asphalt pitch. k Per cwt. l Not used. m 1% discount for cash. o Per 60-lb. p 6-drum. q Per 90-lb. roll. r F.o.b. factory Chicago. t Federal tax included. u Per 90 lb. square. v Per ton. w Price to large paint contractors is $1.25 less. x Mineral surfaced. y 55-gallon container. z Drums. aa Approximate cost per 100 lbs. bb Roofers coating and cement. Price per ton. cc LCL, truck delivery. dd 2% cash discount. ee Asphalt, in 100 lb. package. ff 5-gal drums. gg F.o.b. factory. hh Incl. freight. A. TTTP 27. B. TTA 468A. C. TTP 31A.

SKILLED AND COMMON WAGE RATES—PER HOUR

	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Common Labor Building	Common Labor Heavy Const.
Atlanta	$2.50	$2.00	$2.25	$2.25	$2.50	$2.50	$2.35	$1.05	$1.05
Baltimore	3.20	2.42	2.80	2.60/2.80	2.50	2.75	2.50	1.38	1.38
Birmingham	2.75	2.125	2.42	2.06	2.30	2.50	2.50	1.10	1.20
Boston	2.888	2.475	2.75	2.80	2.97	2.75	2.695	1.815	1.815
Chicago	2.825kA	2.70A	2.80	2.65A	2.865An	2.91n	2.75	2.05m	2.05m
Cincinnati	2.84	2.475	2.665	1.825/2.85	2.67	2.70	2.64	1.65	1.65
Cleveland	3.00	2.825e	2.825	2.76	2.825	2.825	2.825	2.10	2.10
Dallas	3.4375†	2.3375	2.50	2.475	3.125†	2.6125	2.6125	1.20	1.35
Denver	3.00	2.35	2.30	2.48	3.00	2.65	2.65	1.575	1.575
Detroit	2.85	2.60	2.85m	2.80	3.005l	2.85	2.75m	1.90	1.90
Kansas City	2.86	2.365	2.53	2.365/2.61	3.025	2.55	2.625	1.73	1.73
Los Angeles	3.00	2.35	2.50	2.30	3.125	2.625	2.625	1.75	1.75
Minneapolis	2.90	2.40	2.57	2.28	2.75	2.645n	2.55	1.67	1.67
New Orleans	2.70	2.06	2.45	2.325	2.375	2.50	2.45	1.10	1.10
New York	3.548br	3.09bo	3.348o	3.348o	3.599ar	3.456as	3.286bp	1.90	1.90
Philadelphia	3.31i	2.65A	3.05iA	2.90	3.075k	3.03/3.283u	2.825k	1.51A	1.81A
Pittsburgh	3.00	2.75	2.75	2.825	2.75	2.75	2.80	1.70	1.70
St. Louis	3.09e	2.70h	2.75	2.76	3.00	2.887c	2.625	1.77	1.77/1.80
San Francisco	3.25b	2.45	2.70	2.41	3.125a	2.75	2.75	1.70	1.70
Seattle	3.30	2.42	2.57	2.50	3.00	2.65	2.75	1.97	1.95
Montreal*	1.75	1.55	1.65	1.45	1.75	1.65	1.70	1.09	1.03

a 6 hr. day. b 7 hr. day. c Incl. 3% vacation stamp fund for bricklayers; 2% for electricians. * Cost of living bonus now included in basic wage. # Includes 5¢ per hr. tool replacement. † Plus $5.00 daily bonus. h $2.37 homes and housing + 5¢ vacation fund. i Incl. 2% welfare. j Incl. 9¢/hr. welfare. k Incl. 7½ ¢/hr. welfare fund. l Incl. 4% vacation fund. m Incl. 5¢/hr. welfare ins. fund. n Incl. 6¢/hr. welfare fund. o Incl. 3% welfare fund. p Incl. 3% welfare fund and 3% pension fund. r Incl. 3% welfare fund and 20¢ pension fund. s Incl. 4% welfare and pension fund and 4% vacation fund. u Incl. 1% welfare fund. e Incl. 10¢ welfare fund.
A Subject to W.S.B. approval.

MEXICO CITY PRICES

In Pesos, F.o.b. City		Aug. '51	Sept.'51
Common Wages—Building (8 hr. day)	av. per hr.	.75*	75*
Common Wages—Heavy Const. (8 hr. day)	av. per hr.	.75*	75*
Skilled Labor Wages			
Carpenters (8 hr. day)	av. per hr.	1.88*	1.88*
Bricklayers (8 hr. day)	av. per hr.	1.88*	1.88*
Struct. Iron Workers (8 hr. day)	av. per hr.	1.25*	1.25*
Struct. Steel Shapes 3"–15" x 12 meters	per metric ton	1,111.01	1111.01
Reinf. Steel, Corr. Rods			
¼" x 11 meters	per ton	1,261.51	1261.51
⅜" x 11 meters	per ton	1,251.13	1251.13
½" x 11 meters	per ton	1,240.75	1240.75
¾" x 11 meters	per ton	1,230.37	1230.37
⅞" x 11 meters	per ton	1,230.37	1230.37
1" x 11 meters	per ton	1,230.37	1230.37
Gravel truck load of 3½ cu. meters			
Blue Gravel	per tr. load	45.00	45.00
Rose Gravel	per tr. load	40.00	40.00
Cement, Std. Port. (Tolteca)	per ton	130.00	145.00
Lumber			
Mex. Sacred Fir (Oyamel)	per M ft.	850.00	850.00
1st Class Pine	per M ft.	1400.00	1400.00
2nd Class Pine	per M ft.	1100.00	1100.00

* Increase by 1/6th—work 6 days, paid for 7 days.

ENR Skilled Average: (Bricklayers, Carpenters, Ironworkers) $2.719. **ENR Common Average:** $1.645;

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ELSIE EAVES, Manager *J. A. MAHONEY, Reports* *M. R. ROESSLER, Statistics*

NEW ENGLAND

BIDS ASKED—BUILDINGS

Mass., West Springfield—PLANT—Bids Asked—H. Duys & Co., Inc., 410 Asylum St., Hartford, Conn., 1 story, 160x172 ft., steel, masonry tobacco processing plant. $170,000. A. R. Sharpe, Columbia Rd., Willimantic, Conn., archt.

SOON LETS CONTRACT—HEAVY CONSTRUCTION

† **Me., Limestone**—HOSPITAL—U. S. Eng., 857 Commonwealth Ave., Boston, Mass., soon lets negotiated contract, 100-bed hospital at Limestone Air Force Base. CD 9/19.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MAINE—State Hy. Comn , Augusta,

Guy R. Allen & Earl Vennah, Rte. 1, Gardiner, Me. CA **$91,903**. bit. grav. road 1.798 mi., F.A. Secondary Proj. S 0135 (2), Poland. Bids Sept 19. CD 9/12.

▲† **Verrier Constr. Co.**, 65 Commercial St., Portland, Me. CA **$1,100,000**. central heating plant addn., Limestone Air Force Base, LIMESTONE, ME. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Sept. 5. CD 8/20.

MASSACHUSETTS—Commonwealth of Mass., Dpt. Pub. Wks., 100 Nashua St., Boston,

A. Bonavita & Sons, 128 Wilcox St., Springfield, Mass. LB **$86,949**. hy. work, Feeding Hills Rd., Southwick and Springfield Sts , Agawam and Southwick. Bids Sept. 18. CD 9/13.

▲† **Gil Wyner Co., Inc.**, 12 Newland St., Malden, Mass. CA **$2,643,621**, est. $2,485,000. runways, taxiways, aircraft parking areas, Spec. 28910, South Weymouth, WEYMOUTH, MASS. First Naval Dist., 495 Summer St., Boston, Mass. Awarded Sept. 18. CD 9/17, under LB.

CONNECTICUT—State Hy. Dpt., State Office Bldg., Hartford, Conn.,

Peter Mitchell, Inc., Hackett Bldg., Greenwich, Conn., CA, **$97,732**, hy. channelization, Norwalk;

Sica Constr. Co., 102 Warren Dr , East Hartford, Conn., CA, **$102,849**, site imprvt. work Wilbur Cross Highway, Vernon.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **John Bowen Co.**, 171 Boston St., Dorchester, Mass. CA **$3,931,800**. 375 HOUSING units, Franklin Hill Ave. and American Legion Hy., Federal Proj. 2-9, Dorchester. BOSTON, MASS. Boston Housing Auth., 230 Congress St., Boston, Mass. CD 7/9, under LB.

Lilly Constr. Co., 122 Hampshire St., Cambridge, Mass. CA **$300,000**. COMMUNITY HALL and SCHOOLHOUSE addn., alterations, West Newton, NEWTON, MASS. Temple Emanuel Bldg. Comn., 385 Ward St , Newton, Mass. Bids July 23. CD 7/17.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

N. Y., New York—B.A. 10/9—Bd. Water Supply, 120 Wall St., Zone 5, Contr. 412, furnishing, testing, del. eight 48 in. and two 36 in. steel motor-operated conical plug valves, two 42 in., two 24 in. and one 12 in. c.i. motor operated conical plug valves, one 14 in. c.i. manually-operated conical plug valve, one 20 in. c.i. motor operated gate valve, pipe couplings and misc. valves for installation in the intake and outlet chambers of the Neversink Tunnel, the Downsville release water chamber and the outlet chamber of the East Delaware Tunnel of the Delaware Aqueduct. CD 6/16/44.

† **Md., Perry Point**—B.A. 10/23—Veterans Admin., Munitions Bldg., Wash. 25, D. C., water treatment plant alterations, addn., incl. removing concrete sedimentation basin, Approx. 14x35x40 ft. deep, constr. concrete sedimentation basin approx. 14x30x60 ft. deep, concrete mixing basins approx. 12x14x25 ft. deep, and 10x10x14 ft. deep, 140 lin. ft. 8 in. tile sewer, etc. at Veterans Admin. Hospital.

BIDS ASKED—BUILDINGS

† **Pa., Tobyhanna**—WAREHOUSES, etc.—B.A. About 10/17—U. S. Eng., 121 N. Broad St., Phila., Zone 1, 4 general purpose warehouses, bldg. and railroad facilities at Signal Corps Depot, approx. 20 mi. northwest of Stroudsburg. Plans deposit $40. CD 2/9.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW JERSEY**—State Hy. Dpt., 1035 Parkway Ave., Trenton,

Franklin Contg. Co., 12 Central Ave., Newark, N. J., CA **$1,008,029**, Constr. Section 7C on Route 4 Parkway (superstructure of viaduct over South Ave. Staten Island Rapid Transit Co. tracks, Central R.R. of N. J. tracks and North Ave) Cranford Twp., Union Co. Bids Aug. 30, awarded Sept. 14. CD 9/5, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Joseph L. Muscarelle, Inc.**, 42 First St., Hackensack, N. J. CA. **$1,000,000**. mfg. PLANT on 7 acre tract Duffy Ave., HICKSVILLE, N. Y. Amperex Electronic Corp., 25 Washington St., Brooklyn 1, N. Y. CD 6/22.

▲ **John W. Cowper Co., Inc.**, Sidway Bldg., Buffalo, N. Y. CA. Total est. **$20,000,000**. Substructures and underground work for 3 bldgs., incl. MACHINE SHOP adn., BOILER HOUSE addn. and pump house water intake from the Niagara River, TONAWANDA, N. Y. Chevrolet Motors Div., General Motors Corp., 3044 W. Grand Blvd., Detroit, Mich. H. E. Beyster & Assoc., Inc., Industrial Bank Bldg., Detroit 26, Mich., engr.-archt. Bids Sept. 19.

Louis H. Cahan & Co., Market St. National Bank Bldg., Phila, Pa. Owner Builds, **$580,000**, 53 ranch type HOUSES, Stuyvesant, Cornwall, Renfrew and Glenwood Aves., Roth & Fleisher, 1420 Walnut St., Phila., Pa., archt.; Owner Builds, **$320,000**, 30 two story brick row houses, one 2 story brick apartment, and one 4 story brick apartment, Edgewood Ave. between Lee and Westfield Aves., TRENTON, N. J. L. Raymond Smythe, 12 N. Warren St., Trenton, archt. CD 8/31/50.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

S. C., Duncan—B.A. 10/11—Town, 18,500 lin. ft. 2- to 8-in. c.i. water lines, pump station and deep well. Harwood Beebe Co., Spartanburg, engr.

† **Fla., Cocoa**—BLOCKHOUSE, etc.—B.A. About 10/12—U. S. Eng., P. O. Box 4970, Jacksonville, Blockhouse and Launching Pads 1 and 2, Air Force Missile Center, Patrick Air Force Base, Serial No. Eng. 08-123-52-43. CD 4/4.

† **Fla., Cocoa** — BLOCKHOUSE, etc. — B.A. 10/12 — U. S. Eng., 575 Riverside Ave., Jacksonville, lockhouse and Launching Pads 1 and 2, Air Force Missile Test Center, Patrick Air Force Base, Eng 08-123-52-43. Plans deposit $15. Extended date. CD 9/19.

† **Ga., Savannah**—DISTRIBUTION, etc.—B.A. 10/12—U. S. Eng., Post Office Bldg., Savannah, Ga., electrical distr. and sub-station system, Hunter Air Force Base, Serail No. Eng 09-133-52-17. Plans deposit $10.

† **Kentucky and Ohio**—B.A. about 11/4—U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va., local protection proj., approx. 6,800 ft. concerte wall, 15 ft. high, 320 ft. earth levee, 4 ft. high, installation approx. 6,600 ft. 6 in. perforated pipe toe drain, 550 ft. 10- to 15-in. sewers, 1,100 ft. 18- to 30-in. sewers, 2,250 ft. 33- to 36-in. sewers, 370 ft. 42- to 60-in. sewers, gate well, gate storage houses in ctiy of Ashland, Boyd Co., along left descending bank of Ohio River, U. S. Hys. 23 and 60, connected with U. S. Hy. 52 by free bridge over Ohio River between Ashland, Ky. and Coal Grove, O., CIVENG 46-022-52-20.

BIDS ASKED—BUILDINGS

Ky., Danville—HOSPITAL—B.A. 10/16—Ephraim McDowell Memorial Hospital, Danville, hospital addn. $300,000. Plans deposit $25, Nevin & Morgan, Starks Bldg., Louisville, archts. E. R. Ronald & Assoc., 554 S. 3 St., Louisville, engrs. CD 6/27/50.

▲ **Ky., Louisville**—NATURAL SCIENCE—B.A. 10/16—University of Louisville, 2301 S. 3 St., 4 story natural science bldg. $1,000,000. Plans deposit $25, W. S. Arrasmith, Lincoln Bldg., archt. CD 6/27.

† **Fla., Panama City**—LABORATORY, etc.—B.A. 10/23—Sixth Naval Dist., Charleston, S. C., constr. laboratory, shops and warehouses at Navy Mine Countermeasure Station NOY 28294, Spec. 29945. Extended date. CD 9/17.

† **N. C., Oteen**—PLANT—B.A. 10/23—Veterans Admin., Munitions Bldg., Wash. 25, D. C., modernizing plant equip. in Boiler House Bldg. 12, for Veterans Admin. Hospital, Spec. 5191-R. Proj. No. 4-4286. CD 5/23.

† **W. Va., Natrium**—PLANT, etc.—B.A. About 10/28—U. S. Eng., 237 Fourth Ave., Huntington, 10, W. Va. constr. chemical corps STB plant, incl. 2 story mfg. bldg., 1 story packaging, storage and shipping bldg.; 6 story blending tower; 4 story, hydration bldg.; outside material handling and storage facilities, steam generating facliities expansion; approx. 2,800 lin. ft. railroad spur, outside utilities, services and roads approx. 20 mi. south of Wheeling, Eng 46-022-52-62. CD 5/2.

▲ **Va., Richmond**—SCHOOL—B.A. 10/29—City, City Hall, construct George Mason School, 28 St. $1,000,000. Marcellus, Wright & Son, 100 E. Main St., archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Sutton & Co., Inc., P. O. Box 428, Station A, Radford, VA., LB. Approx. **$425,806**, relocation of railway between Butchers and Sandy Creek, Mecklenburg Co., VIRGINIA. Danville & Western Ry. Co., M. O. Cochrane, Engr. M. W., P. O. Box 1907, Charlotte, N. C. Bids Sept. 12.

▲ **GEORGIA**—State Hy. Dpt., Atlanta,

R. A. Bowen, Macon, Ga., CA, **$74,157**, grading 5.455 mi. Rockingham to Ten Mile Creek Church Rd., beginning at S.R. 32 in Rockingham and exten. southeast PR-1383 (1), Bacon Co.; CA, **$121,002**, grading, base, surf. 2.861 mi. Woodland to Thomaston Rd., beginning at Talbot Co. line and exten. northeast toward Thomaston, SAP-1700-B (4) Upston Co.; CA, **$83,721**, grading, base, surf. 4.696 mi. Sparta to Sandersville Rd., beginning at end of present pavementt approx. 5 mi. south of Sparta and exten. toward Sandersville, S-0787 (1), Hancock Co.

Hugh Steele Constr. Co., Centre, Ala., CA, **$60,597**, base and surf. 7.036 mi. Po-Biddy to Thomaston Rd., beginning at end of present pavement approx. 8.4 mi. north of Po-Biddy and exten. north to State Route 3 southeast of Thomaston PR-85 (4), Talbot and Upson Counties; CA **$64,789**, grading, base, surf. 6.49 mi. Lovejoy to McDonough Rd., beginning S.R. 3 at Chinns Crossroad and ends of F.A.S. Route 1070 approx. 2.5 mi. southwest of McDonough, SAP-854-A, Henry Co.; CA, **$75,759**, grading, base, surf. 5.896 mi. Fayetteville to Hastings Bridge Rd., beginning at S.R. 54 approx. 2 mi. northeast of Fayetteville and ends at State Route 3 at Hastings Bridge, PR-571 (2), Fayette and Clayton Counties.

Harry Brown, Milledgeville, Ga., CA, **$73,773**, grading, base and surf. 3.564 mi., also new concrete deck on existing bridge on Gordon to Milledgeville Rd., beginning at end of present pavement approx 9.7 mi. south of Milledgeville and exten. toward Gordon, S-0781 (3), Baldwin and Wilkinson Counties.

Wright Contg. Co., 504 25 Ave., Columbus, Ga., CA, **$86,608**, base and surf. 12.401 mi. Greenville to Hogansville Rd., beginning at S.R. 41 north of Greenville and ends at Troup Co. line, PR-822 (7), Meriwether Co.

Cornell-Young Co., Macon, Ga., CA, **$307,328**, grading, paving 0.735 mi. Broadway and Ocmulgee Sts., in Macon or the Macon to Jackson Rd., beginning at intersection of Broadway and Mulberry Sts. and exten. along Broadway to Ocmulgee Sts., thence along Ocmulgee to Spring Sts., U-037-1(1), Bibb Co.

Robert T. Main Co., Brandon Rd., Salem, Va., CA, **$452,467**, grading, paving 5.606 mi. Lithonia to Conyers Rd., approx. 12.6 mi. east of Decatur and exten. east on relocation to point near intersection with State Route 138 in Conyers, FI-046-1 (2), DeKalb and Rockdale Counties.

Hugh McMath Constr. Co., Brennan Rd., Columbus, Ga., CA, **$197,100**, grading, paving 4.165 mi. Macon to Milledgeville Rd., beginning approx. 1 mi. southwest of city limits of Milledgeville and exten. toward Macon, F-089 1 (3), Baldwin Co.

J. G. Attaway Constr. Co., Statesboro, Ga., CA, **$190,694**, grading, base, surf. 10.888 mi. Guyton to Oliver to Newington Rd., beginning near Egypt and exten. through Oliver ending at S.R. 21 in Newington, S 0952 (1) and S-0722 (3), Effingham and Screven Counties.

Coffee Constr. Co., Eastman, Ga., CA, **$94,658**, grading 8.074 mi. Chester to Cadwell Rd., beginning in Chester

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction

(Name in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings
Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects invloved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

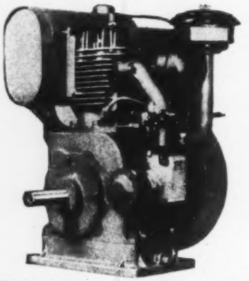
Symbols and Abbreviations Include:

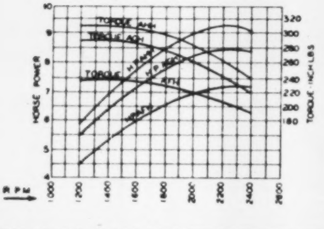
†	Federal Government
▲	Project of $1,000,000 or over.
B.A.	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

Four Single-Cylinder WISCONSIN *Air-Cooled* ENGINES Offering More POWER ADVANTAGE, 6 to 9 hp.

This series of single-cylinder models have all of the traditional Wisconsin heavy-duty features such as self-cleaning tapered roller bearings at both ends of the crankshaft, rotary-type, high tension OUTSIDE magneto operating as an independent unit, and maximum torque at all usable speeds.

AEH, AFH, AGH, and AHH single-cylinder standard engine models, 6 to 9 hp.





POWER CURVE AND HORSEPOWER LISTING SHOWS MAXIMUM DYNAMOMETER HORSEPOWER OF ENGINE complete with fan, muffler, and air cleaner. For continuous heavy-duty operation do not rate the engine at more than 80% of the horsepower shown at any given speed.

MODELS	AEH	AFH	AGH	AHH
Bore .... inches	3	3¼	3½	3⅝
Stroke .... inches	3¼	4	4	4
No. of cylinders	1	1	1	1
Displ. cubic inches	23	33.2	38.5	41.3
H.P. and R.P.M. range	3.9 at 1600 6.1 at 2600	6.0 at 1600 7.2 at 2200	7.2 at 1600 8.4 at 2200	7.7 at 1600 9.2 at 2200
Net weight in lbs., Standard Engine	130	180	180	180
Added weight for clutch	35	35	35	35
Added weight for reduction	25	60	60	60
Added weight for clutch reduction	80	80	80	80

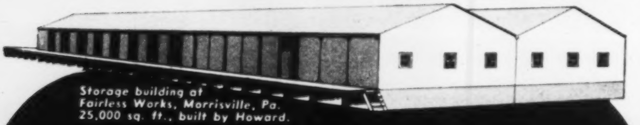
Our engineering department will gladly cooperate with you in adapting Wisconsin Engines to your requirements. Write for detailed data and name of the nearest Wisconsin distributor.

MOST H.P. HOURS

WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines

MILWAUKEE 46, WISCONSIN



Storage building at Fairless Works, Morrisville, Pa. 25,000 sq. ft., built by Howard.

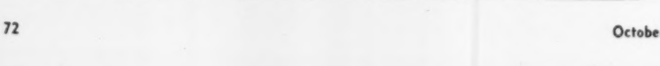
FOR A LOW BID, PROMPT DELIVERY, AND EFFICIENT ERECTION OF STEEL BUILDINGS,

CONTACT

HOWARD STEEL COMPANY

1014 S. DITTMER ST., DAVENPORT, IOWA

Office building at Fairless Works, Morrisville, Pa. 25,000 sq. ft., built by Howard.



and ends in Cadwell, SAP-1740 (4), Laurens and Dodge Counties.

Acme Constr. Co., Cochran, Ga., CA, **$138,529**, grading base, surf. 8.538 mi. S.R. 49 to S.R. 44 Road, beginning at S.R. 49 approx. 13 mi. southwest of Milledgeville and ends at S.R. 44 approx. 9 mi. north of Gray, S-1080 (1), Jones Co.

Crummey & Crummey, Rochelle, Ga., CA, **$98,950**, grading, base and surf. 5.235 mi. Jakin to Blakely Rd beginning end of present pavement approx. 10 mi south of Blakeley and exten. toward Jakin, S-1192 (2), Early Co.

Dixie Contr. Co. of Georgia, Inc., 747 Wheaton St., Savannah, Ga., CA, **$456,618**, grading, paving 13.822 mi. Ludowici to Eulonia Rd., beginning at end of present pavement approx. 4.2 mi. southeast of Ludowici and ends at the S.A.L. Railroad in Townsend S-0612 (2) and S-0612 (3), Long and McIntosh Counties.

E. M. Beckham Constr. Co., Perry, Ga., CA, **$178,259**, grading, base, surf. 11.516 mi. Marshallville to Perry Rd., beginning approx. 350 ft. east of Central of Ga. R.R. crossing in Marshallville and ends at S.R. 7 approx. 2 mi. south of Perry, Proj. S0674(1), Macon, Houston and Peach Counties. Grand total $2,755,010. Bids Sept. 14. CD 9/7.

▲† **J. A. Jones Constr. Co.**, 209 W. 4 St., Charlotte, N. C., CA, **$1,643,690**, streets, water systems, storm drainage etc. at Albany Marine Depot, ALBANY, GA. Dpt. Navy, Officer in Charge of Constr., Box 365, Naval Base, S. C. Bids Sept. 13. CD 9/19, under LB.

† **U. S. Eng.**, Post Office Bldg., Savannah, Ga., cancelled bids to have been opened Oct. 12, electrical distr. and sub-station Hunter Air Force Base. Serial No. Eng 09-133-52-17, SAVANNAH, GA. CD 9/20.

FLORIDA—State Rd. Dpt., County Court House, Fort Myers,

Powell Bros., Inc., Fort Lauderdale, Fla., LB, **$290,768.** 420 ft. concrete, steel, bridge over Kissimmee River Road 700 Job 0911-108, Okeechobee and Highlands Counties. Bids Sept. 14. CD 9/7.

▲ **FLORIDA**—State Rd. Dpt., County Court House, Fort Myers,

J. W. Conner & Sons, 3916 E. 8 Ave., Tampa, Fla., LB **$70,942**, paving Road S-574A, from 40 St. in Tampa east to Road 43, Job 1056-150, Hillsboro Co.

J. D. Manly Constr. Co., Leesburg, Fla., LB, **$68,915** resurf. Roads 459 from Howey-in-the-Hills to Taveres, Job 1108-104, Lake Co.

Brinson Constr. Co., 51 St. and E. Broadway Ave. Tampa, Fla., LB, **$88,417**, grading, paving Road S-865 Estro Island to SAL Railroad, Job 1253,-150, Lee Co.; LB **$189,236**, paving Road S-827, from point approx. 1.25 mi. east of Road 25 at Okeelanta to point approx. 1.226 mi. east, Job 9356-150, Palm Beach Co., and grading, paving Road S-807, from Road 812 to Road 802, Job 9538-150, P and grading, paving, drainage structures Road S-804, from Road 809 to 1 mile west, Job. 9364-150, Palm Beach Co.

Hubbard Constr. Co., Oralndo, Fla., LB, **$88,045**. grading, paving Road Nos. S-13 and S-426A, from Brumleys Corner to Econlatanchee River and from Chuluota Road to Johnson Corners, Job. 7755-150 and 7755-150, Seminole Co.

Caddell & Jackson, 2014 Dennis St., Jacksonville, Fla., LB, **$81,104**, grading, paving Roads S-11-A, S-111 and S-104A, from Terrell Rd. to Arnold Ave. from Road 5 to Starrat Rd. and from New Berlin Rd. approx. 1.45 mi. west, Job. 7270-150, 7271-150 and 7278-150, Duval Co.

Fairchild-Florida Constr. Co., Live Oak, Fla., LB, **$75,272**, grading, paving, drainage structures, Road 357, from Road 51 to point approx. 3 mi. southeast, Job. 3353-150, Lafayette Co.

Smith Eng. & Constr. Co., W. Pensacola St., Pensacola, Fla., LB, **$297,413**, grading, paving, drainage structures, Road 292 from Gulf Beach to Warrington, Job 4854-150, Escambia Co., and resurf. Road S-292, from Inerarity Point to Gulf Beach Rd., Job 4854-141, Escambia Co.

A. B. Covell, De Funiak Springs, Fla., LB, **$159,359**, grading, paving, Road S-393, Oyster Lake Rd., Job 6053-151, Walton Co.

Finley P. Smith, Fort Lauderdale, Fla., LB **$63,854**, regrading, paving, etc. Road S-709, between point approx. 6.3 mi. west of State Rd. 5 and point approx. 3.8 mi. west of State Rd. 5, S-295 (2), Job 9851-251, Martin Co., Bids Sept. 14.

received no bids Sept. 14, grading paving, drainage structures Road S-22-A, between Road 30 at Parker and Road 22 in Springfield, Job 4655-150, Bay Co. CD 9/7.

ALABAMA—State Hy. Dpt., Montgomery,

Clyde O. Mitchell, 104 N. 44 St., Birmingham, Ala., CA, **$539,999** grading, drainage 12.222 mi. part of Decatur-Moulton Rd., F-119 (2), Lawrence Co. Bids Aug. 31. CD 9/17, under LB.

T. L. James & Co., Inc., Ruston, La. CA **$555,825**. navigation lock at Ostrica, East bank of Mississippi River, Plaquemines Parish, LOUISIANA. State, Dpt. Pub. Wks., Capitol Bldg., Baton Rouge, La. Bids July 18,, awarded Sept. 19. CD 7/24, under LB.

▲ **Texas Constr. Co.**, Box 1384, Dallas, Tex. LB **$1,107,846**, est. $1,350,000. embankment, incl. 1,280,000 cu. yd. borrow material, high level crossing over West Atchafelaya Floodway, near KROTZ SPRINGS, LA. New Orleans, Texas & Mexico Railway Co., C. S. Kirkpatrick, ch. engr., 204 Union Station, Houston, Tex. Bids Sept. 19. CD 8/27.

Farnsworth & Chambers Co., 3018 Leeland St., Houston, Tex. CA **$930,259**. concrete fdn. on timber piling concrete framing and deck for Napoleon Ave. Wharf, NEW ORLEANS, LA. Port of New Orleans, No. 2 Canal St., New Orleans, La. Awarded Sept. 19. CD 9/12, under LB.

KENTUCKY—State Hy. Dpt., Frankfort,

Huron Contg. Co., Louisville, Ky., LB **$102,251**. bridge and traffic bound limestone approaches 0.797 mi. Louisville-Shepherdsville Rd., SG 478 (3), SP 15-14, Bullitt Co. Bids Sept. 14. CD 8/30.

† **Central Contg. Co.**, Oshkosh, Wis. LB **$69,721**. replacing sect. 8 Boule Weir with concrete fixed weir at Dam 41, KENTUCKY. U. S. Eng., 830 W. Broadway, Louisville, Ky. Bids Sept. 19. CD 8/24.

▲ **KENTUCKY**, State Hy. Dpt., Frankfort,

McDade & McDade, Fulton, Ky. LB **$65,779**. bit. penetration macad. surf. and seal 3.648 mi. Moscow Clinton Rd., S 329 (3), SP 53-249, Hickman Co.

Franklin Constr. Co., Frankfort, Ky. LB **$93,806**, bit. penetration macad. surf. and seal 5.531 mi. Clinton-Oakton Rd., S 504 (3), SP 53-149, Hickman Co.

Gentry Constr. Co., 182 Preston Ave., Lexington, Ky. LB **$96,772** traffic bound limestone 2.973 mi. Wooton-Cutshin-Clover Fork Rd., S 244 (1), RS 66-292, Leslie Co.

Kelly Contg. Co., Fincastle Bldg., Louisville, Ky. LB **$152,988** bit. surf. Class I 0.811 mi., Main St. in Sturgis, F 94 (2), SP 113-167, Union Co.

Lyons & Breeden, Rogersville, Tenn., LB **$63,528**, reconstr. traffic bound limestone 3.925 mi. Allegre-Claymour Rd., RS 110-46, Todd Co.

Wood & Barton Co., 410 Ann St., Frankfort, Ky. LB **$71,019**, reconstr. traffic bound limestone 1.268 mi. Asher-Saylor Rd., RS 66-112, Leslie Co.

Davidson & Cocke, Mayfield, Ky., LB **$71,209**, reconstr. local bank or creek grav. 1.717 mi. Meridian Rd., RS 42-38; 1.917 mi. Knob Creek Rd., RS 42-78; 2.537 mi. Mobley Camp Ground Rd., RS 42-58, 53-449, Graves and Hickman Counties; LB **$63,857**, traffic bound river grav. 3.678 mi. Bondurant Rd., S 235 (1), RS 38-587, Fulton Co.

Sam Nally Co., Bardstown, Ky., LB **$71,024**, reconstr. traffic bound limestone 6.677 mi. Gilbert Creek Rd., RS 3-331, Anderson Co.

L. G. Arnold, Inc., Eau Clairre, Wis., LB **$74,979**, reconstr. traffic bound limestone 4.727 mi. Munfordville-Priceville Rd., RS 50-480, Hart Co.

Davis Shelton Constr. Co., Sandry Hook, Ky. LB **$127,150**, traffic bound limestone 4.682 mi. East Fork Rd., S 229 (1), RS 6-224, Bath Co.

Winston Ford Co., Prestonsburg, Ky. LB **$100,649**. local bank or creek grav. S 244 (1), RS 66-292, Leslie Co.

W. C. Snider, Danville, Ky., LB **$140,498**, traffic bound limestone 3.189 mi. Danville-Harrodsburg Rd., F 294 (1), SP 84-112, Mercer Co.

Hendley Constr. Co., Inc., Louisville, Ky., LB **$64,069**, reconstr. traffic bound limestone 4.426 mi., RS 110-566, 110-46, Todd Co. Bids Sept. 14. CD 8/30.

G. H. Leach Co., Empire Bldg., Bellefontaine, O. LB **$106,283**, est. $125,034 imprv. water sys., LOUISVILLE, KY. Prreston Street Rd. Water Dist., Louisville, Ky. Bids Aug. 31. CD 8/20.

† **U. S. Atomic Energy Comn.**, Oak Ridge, Tenn., rejected bids Aug. 31, Sub-Station Structure 20, substation fencing and East Research area fence lighting, Inv. No. 401-52-2A, OAK RIDGE, TENN. L.B. **$48,903**. CD 8/20.

BUILDINGS

LOW BIDS AND CONTRACTS

Neilson Constr. Co., Harrisonburg, Va., CA. **$530,563**. construct SCIENCE BLDG., Madison College, HARRISONBURG, VA. State of Virginia, Richmond, Va. J. Binford Walford & O. Pendleton Wright, 103 E. Cary St., Richmond, Va., archts. Bids Sept. 18. CD 8/16.

Thorington Constr. Co., Inc., 205 E. Canal St., Richmond, Va., LB. Approx. **$527,700**. construct Southeastern SCHOOL, NORFOLK, VA. Norfolk Co., Portsmouth, Va., Bids Sept. 14. J. Binford Walford & O. Pendleton Wright, 103 E. Cary St., Richmond, Va., archts.

▲ **American Can Co.**, 100 Park Ave., New York, N. Y. Own Forces, **$2,000,000**, PLANT on 100-acre site, PLYMOUTH, FLA.

Farnsworth & Chambers, Box 332, New Orleans, La. LB **$887,605**. brick, steel Taylor Park SCHOOL, S. Roman and Third Sts., NEW ORLEANS, LA. Orleans Parish School Bd., 703 Carondolet St., New Orleans, La. Bids Sept. 14. CD 8/6.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

Ill., **Columbia**—B.A. 10/11—City, Albert C. Metter, mayor, materials for water supply main extensions incl. c.i. pipe, c.i. fittings, gate valves and boxes, check valves. Russell, Axon & Assocs., 408 Olive St., St. Louis, 2, Mo., engr.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Moyer Bros.**, 2605 Beale Ave., Altoona, Pa., CA. **$1,093,000**, est. $1,000,000. propeller test bldg., Wright Field, DAYTON, O. U. S. Eng., 830 W. Broadway, Louisville, Ky., Bids July 24, awarded Aug. 19. CD 7/11.

INDIANA—State Hy. Comn., Indianapolis,

J. C. O'Connor & Sons, Inc., 2104 Miner St., Fort Wayne, Ind., LB, **$791,359**, est. $938,543, dual lane, 16, 22 and 24 ft. 0.228 mi. State Rd. 420 Hammond, Lake Co.

Wm. D. Vogel Constr. Co., 3760 E. St. Clair St., Indianapolis 1, Ind., LB, **$754,712**, est. $835,483, c.conc. 11.514 mi. U. S. Rd. 52, Hendricks Co. line to 16 St. Indianapolis, Marion Co.

Layne Northern Co., Mishawaka, Ind., plant and well.

E, R. Knapp, La Crosse, Wis., CA, waterlines.

Chicago Bridge & Iron Co., 332 S. Michigan Ave. Chicago, Ill., CA, tank, KNOX, IND. Est. **$158,104**. Town, Town Hall, Knox, Ind. Henry B. Steeg, 23. N. Meridian St., Indianapolis, Ind., engr. Awarded Sept. 7. CD 3/28/46.

Brautigam & Co., 4650 W. Lawrence St., Chicago, 30, Ill. LB, **$149,948**, auxiliary outlet sewer W. Thorndale Ave. between Central Park Ave. and North Shore Channel, CHICAGO, ILL. City, City Hall, Chicago, 2, Ill. CD 6/7.

Palumbo Excavating Co., 2738 W. Harrison St., Chicago, 12, Ill., **$105,120**, alternate **$94,900**, West Route Superhighway excavation, South Halsted to S. Desplaines Sts., CHICAGO, ILL. City, City Hall, Chicago 2, Ill. CD 4/25/45.

Walsh Oil Co., Inc., Joliet, Ill., CA, **$220,897**, sanitary sewer connections at Joliet and Stateville penitentiaries, JOLIET, ILL. State Div. Architecture, State Capitol, Springfield, Ill. CD 7/27/50.

Kerasotes Theatres, George Kerasotes, genl. mgr. and secy., 300 Kerasotes Bldg., Springfield, Ill. Separate Contracts. **$300,000**, 1200-car drive-in motion picture theatre, screen tower, projection and concessions bldg. patio for dancing, kiddieland amusement park, etc., on U.S. 66 south of city limits, SPRINGFIELD, ILL. CD 4/3.

Santucci Constr. Co., 5044 Carol St., Skokie, Ill., LB, **$579,522**, secondary treating works and 17,000 ft. storm drains, WHEATON, ILL. City, City Hall, Wheaton, Ill. Bids Sept. 4.

BUILDINGS

LOW BIDS AND CONTRACTS

Gerhardt F. Meyne Co., 7 S. Dearborn St., Chicago, 3, Ill. CA, **$300,000**, 54,000 sq. ft. 3 floor OFFICE modification, CHICAGO, ILL. Material Service Co., Washington and Wells Sts., Chicago, Ill. Friedman, Alschuler & Sincere, 223 Jackson Blvd., Chicago, 6, Ill., archts. Awarded Sept. 13. CD 11/18/48.

Talmage & Anderson, 1821 W. North St., Chicago, 22, Ill. CA, **$110,000**, 3 story spring PLANT Addn., CHICAGO, ILL. Nachman Corp., 4560 W. Armitage St., Chicago, 39, Ill. Bids Aug. 27, awarded Sept. 14. CD 8/23.

Slezak Constr. Co., 5901 N. Leonard St., Chicago, 31, Ill., CA, **$750,000**, 2 story, 72,000 sq. ft. FACTORY, CHICAGO, ILL. Admiral Corp., 3800 W. Cortland St., Chicago, 47, Ill. Awarded Sept. 10. CD 8/6.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

Tex., **Seminole**—B.A. 10/16—City, street paving, 182,150 sq. yd. triple asph. surf. tr. on 8 in. 2-course crushed caliche base, 72,100 lin. ft. concrete curbs and gutters. $300,000. Joe E. Ward, Nacol Bldg., Wichita Falls, engr. CD 4/11.

† **N. M., Las Cruces**—B.A. About 10/26—U. S. Eng., P.O. Box 1538, 2134 E. Central Ave., Albuquerque, landscaping and erosion control, family housing area, Navy, White Sands Proving Ground (NAV-91), Serial No. 29-005-52-15. Plans deposit $75.

SOON LETS CONTRACT—BUILDINGS

▲ **Tex., Texas City**—LABORATORY, etc.—Pan-American Refining Corp., Texas City, soon lets contract 2 and 3 story chemical engineering and research laboratory, $650,000; 2 story office, clock and payhouse, gate house, watchmans quarters, $350,000. CD 9/20.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Berger Constr. Co., Higginsville, Mo. CA **$134,265**. 70 mi. rural distr. lines, Fremont and Page Counties, MISSOURI. Atchison-Holt Electric Co-operative, Rock Port, Mo. Bids Sept. 19. CD 8/29.

† **Massman Constr. Co.**, 20 W. 9 St., Kansas City 6, Mo. CA **$641,700**. pile dikes, revetment repairs at Missouri River, East Bottoms to Missouri City Bends, Inv. 52-50, MISSOURI. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. CD 9/12, under LB.

† **Mid-States Constr. Co.**, New Hampton, Ia. LB **$199,305**. emergency levee repairs on Grand River and Chariton River, left bank of Missouri River, near DeWitt, Inv. 52-51, MISSOURI. U. S. Eng., 601 Davidson Bldg., Kansas City, Mo. Bids Sept. 18. CD 9/5.

▲† **Patto Constr. Co.**, 1340 Admiral St., Kansas City, Mo. LB **$1,429,421**. bulk petroleum storage facilities, Inv. KCM 52-1, PARKVILLE, MO. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Sept. 11. CD 9/5.

Southern Wood Preserving Co., P.O. Station A, Atlanta, Ga. LB **$100,046**, est. $108,000, furnishing, framing, treating, del. bridge timber for use on railroad deck of northern approach of Douglas MacArthur Bridge in East Saint Louis, Ill., ST. LOUIS, MO. City, Frank J. McDevitt, pres., Bd. Pub. Service, 304 City Hall, 12 and Market Sts., St. Louis 3, Mo. Bids Sept. 18. CD 8/29.

† **C. & L. Electric Co.**, Pocatello, Idaho, LB **$109,442**. sub-stations at Winner, Gregory and Bonsteel, DC-3515, DC-3516, DC-3517, all Missouri River Basin Proj., Transmission Div., SOUTH DAKOTA. Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo. Bids Sept. 18. CD 8/22.

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Inland Constr. Co., 3867 Leavenworth St., Omaha, Neb., CA. **$75,000.** repair bridges damaged by recent floods McCOOK, NEB. Red Willow Co., McCook, Neb.

TEXAS—State Hy. Comn., Austin,
Heldenfels Bros., Rockport, Tex., CA. **$602,986**, wid'n. structures reconstruct and wid'n. flexible base and b. conc. pavement 18.357 mi. Hy. U.S. 77, Proj. C 327-2 and 3-8 and 6, Kenedy Co. Bids Sept. 11, awarded Sept. 17. CD 9/14, under LB.

▲ **Farnsworth & Chambers, Inc.**, Box 74, Houston, Tex. CA **$3,748,232**, Baytown Tunnel completion, Proj. No. F 839 (5), Harris Co., TEXAS. State Hy. Comn., Austin, Tex. Bids Sept. 11, awarded Sept. 19. CD 9/14, under LB.

▲ **Farnsworth & Chambers, Inc.**, P. O. Box 74, Houston, Tex., LB. **$689,000.** Program 1, coliseum; LB. **$519,220.** Program 2, 4-H Bldg. and dining hall, LB. **$626,110,** Program 3, agricultural exhibit bldgs. County Fair Project, WACO, TEX. McLennan Co., Court House, Waco, Tex. Bids Sept. 17. CD 8/29.

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **Del E. Webb Constr. Co.**, Box 4066, Phoenix, Ariz. LB. **$1,867,416.** construction and modification 8 BUILDINGS, total 71,500 sq. ft. in new bldgs., Inv. No. 291-52-14, AMARILLO, TEX. U. S. Atomic Energy Comn., Los Alamos, N. M. Bids Sept. 18. CD 8/2.

Cain & Cain, Majestic Bldg., Fort Worth, Tex., CA. **$770,780**, est. $500,000. 2 story masonry HIGH SCHOOL, concrete beam and pier fdn., FORT WORTH, TEX. Common Consolidated School Dist. 47 (White Settlement) 8153 White Settlement Rd., Fort Worth, Tex. Bids Sept. 18, awarded Sept. 20. CD 7/12.

Texas Gulf Constr. Co., Box 661, Houston, Tex., LB. **$577,485**, est. $492,000. general SCHOOL BLDG. imprv. program, GOOSE CREEK, TEX. Goose Creek Independent School Dist., Baytown, Tex. Bids Sept. 20. CD 9/10.

Smith Building Co., Inc., Box 796, Waco, Tex., CA. **$568,240**, Sul Ross SCHOOL, WACO, TEX. Waco Independent School Dist., Waco. Easterwood & Easterwood, 601 Service Mutual Bldg., Waco, Tex., archts. Bids Sept. 19, Awarded Sept. 21.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

Calif., Folsom—B.A. 10/24—City, City Hall, sewers and treatment plant. Plans deposit $25. Extended date. L. C. Macabee, 156 University Ave., Palo Alto, engrs. CD 8/30.

Calif., Los Angeles—B.A. 11/14—Los Angeles County Sanitation Dist. 2, 2020 Beverly Blvd., 4500 ft. 54 in. rein.-con. pipe, Joint Outfall "D" Unit 3, Trunk Sewer, Approx. $60,000. A. M. Rawn, dist. engr.

BIDS ASKED—BUILDINGS

Wash., Seattle—WAREHOUSE—B.A. 10/4—Port of Seattle, Bell St. Terminal, 3 story, rein.-con. refrigerated fish storage warehouse, $450,000. Plans deposit $50. G. T. Treadwell, port engr. CD 11/10/48, under Unclassified.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Daum-Donaldson Constr. Co.**, 321 S. 24 St., Phoenix, Ariz., LB, **$937,993**, constr. barracks, administration bldg. and radio bldg., Spec. 30847, Litchfield Park, GOODYEAR, ARIZ. Dpt. Navy, Eleventh Naval Dist., San Diego, Calif. Bids Sept. 14. CD 9/5.

WASHINGTON—State Hy. Dpt., Olympia,
General Constr. Co., 1850 N.W. Front St., Portland, Ore. LB **$201,660**, redecking bridge on 0.365 mi. Highway 12 over Naselle River, Bridge No. 12-JM/1, Pacific Co. Bids Sept. 18. CD 9/7.

WASHINGTON—State Hy. Dpt., Olympia,
Northwest Constr. Co., 3950 6 Ave. N.W., Seattle, Wash., LB, **$297,170**, clearing, draining, grading rein.-con. bridge on 3.126 mi. Hy. 5, Morton south F.A.P. No. F-015-1 (1) Unit 2, Lewis Co. Bids Sept. 18. CD 9/7.

† **Agutter Electric Co.**, 952 E. Seneca St., Seattle, Wash., LB, **$957,580**, est. $1,020,542, aircraft refueling sys. at McChord Air Force Base, Eng 45-108-52-32, TACOMA, WASH. U. S. Eng., 4735 E. Marginal Way, Seattle, 4, Wash. Bids Sept. 21. CD 9/6.

Ke-Ston Constr. Co. & Muny, 3477 Liberty Blvd., South Gate, Calif., CA, **$492,433**, sanitary sewage works, ANTIOCH, CALIF. City, City Hall, Antioch, Calif. Bids Sept. 17. CD 8/15.

Stolte Inc., Monterey, Calif., LB **$67,373** clarifier mechanism, sewage treatment imprv., CARMEL, CALIF. Carmel Sanitary Dist., Ricketts Bldg., Carmel, Calif. Bids Sept. 10. CD 8/15.

Chester Sanitary Dist., office of Justice of Peace, Chester, Calif., received no bids Sept. 14, sewers in CHESTER, CALIF.

▲† **F. E. Young Constr. Co.**, 2141 Main St., San Diego, Calif., LB, **$4,087,081**, eight 100-man Barracks, misc. facilities, road, warehouses, etc., MIRAMAR, CALIF. Dpt. Navy, Eleventh Naval Dist., San Diego, Calif. Bids Sept. 20. CD 9/5.

▲† **Ford J. Twaits Co.**, 449 S. Beaudry St., Los Angeles, Calif., **Morrison-Knudsen Co.**, 411 W. 5 St., Los Angeles, Calif., and **Macco Corp.**, 14409 Paramount, Calif., LB, **$3,661,000,** launching facilities and misc. bldgs. Spec. 31554, POINT MUGU, CALIF. U. S. Naval Air Missile Test Center, Point Mugu, Calif. Bids Sept 19

BUILDINGS

LOW BIDS AND CONTRACTS

† **Lovedahl & Sorensen**, Idaho Falls, Idaho, CA **$195,679**, 122x202 masonry warehouse, 85x22 ft. masonry bus depot, 20x40 ft. frame equipment dispatcher's bldg. 25x60 ft. locomotive shed, ARCO, IDAHO. Idaho Operations Office, U. S. Atomic Energy Comn., Idaho Falls, Idaho. Bids Sept. 5. CD 8/30.

Commercial Builders, Moscow, Idaho. LB. **$338,557,** ADMINISTRATION bldg., at State Hospital North OROFINO, IDAHO. State Bd. Examiners, Boise, Idaho. CD 9/28/48.

J. C. Boespflug Constr. Co., 1912 4 Ave. S., Seattle, Wash. CA, **$750,000**, 250x225 ft. rein.-con. DISTRIBUTING BLDG., SEATTLE, WASH. Western Electric Co., 820 Fairview Ave. N., Seattle, Wash. CD 7/18.

Hedeen Constr. Co., 1404 N. 143 St., Seattle, Wash., LB, **$446,025**, HOSPITAL, SOUTH BEND, WASH. Pacific Co. Hospital Dist., South Bend, Wash. Bids Sept. 18. CD 8/28.

Industrial Engineers & Contractors, 711 Middle Waterway, Tacoma, Wash., CA, 2 SHIPBUILDING WAYS on piling foundation;

Timber Structures, Inc., 3400 N.W. Yeon Ave., Portland, Ore., CA, main STRUCTURAL UNITS, TACOMA, WASH. Tacoma Boat Building Co., 2412 E. D St., Tacoma, Wash. Est. **$500,000**. CD 9/4.

The Austin Co., 16112 Euclid Ave., Cleveland, O., CA, **$130,000,** PLANT OFFICE, WENATCHEE, WASH. Aluminum Co. of America, 2156 Gulf Bldg., Pittsburgh, Pa. CD 1/18.

J. E. Stark, 1131 E. "A" St., Ontario, Calif., CA, **$688,939**, est. $496,809, Lincoln SCHOOL addns., LA VERNE, CALIF. La Verne City School Dist., 6 and D Sts., La Verne, Calif. Bids Aug. 24, awarded Sept. 14. CD 9/5, under LB.

▲ **C. L. Peck**, 816 W. 5 St., Los Angeles, Calif., CA, **$2,300,000**, 7 story, rein.-con. HOSPITAL, Sunset and Egemonts Sts., LOS ANGELES, CALIF. Permanente Foundation, 280 W. McArthur Blvd., Oakland, Calif. Bids Aug. 31. Wolff & Phillips, Pearson 4 Ave. Bldg., Portland, Ore., archts. CD 6/15.

ALASKA

BIDS ASKED—HEAVY CONSTRUCTION

† **Alaska**—GENERATORS—B.A. 10/18—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., generators for Eklutna Power Plant, Eklutna Proj., Spec. No. DC-3536. Extended date. CD 91/11.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Peter Kiewit Sons Co.**, 1024 Omaha Natl. Bank Bldg., Omaha, Neb., CA. **$8,493,313,** est. $9,730,267, outside utilities at Ladd Air Force Base, Inv. No. S95-507-51-126, ALASKA. U. S. Eng., New Washington Hotel, Seattle 1, Wash. Bids July 31. CD 8/8, under LB.

▲† **Kuney-Johnson Co.**, 235 9th Ave., N., Seattle, Wash. CA. **$1,069,000.** ACS facilities at Fairbanks, Inv. No. S95-507-51-119, ALASKA. U. S. Eng., New Washington Hotel, Seattle, 1, Wash. Bids Aug. 10. CD 8/17, under LB.

▲† **Palmer Constructors** (Peter Kiewit Sons Co., 1024 Omaha Natl. Bank Bldg., Omaha, Neb., Coker Constr. Co., Morrison-Knudsen Co., Inc., 319 Broadway, Boise, Idaho), CA. **$17,348,865.** 4 mi. water diversion tunnel for Eklutna hydro-electric projects, at Palmer, ALASKA. Bureau Reclamation, Dpt. Interior, Palmer, Alaska. Bids Sept. 11. CD 9/21, under LB.

† **M. P. Munter Co.**, Vance Bldg., Seattle 1, Wash., CA. **$199,139**, est. $233,324. clearing 300 acre receiver station site and 593 acre transmitter site, Inv. 52-9, Fort Richardson and Elmendorf Air Force Base, ALASKA. U. S. Eng. (APO 942, c/o PM, Seattle, Wash.) Anchorage, Alaska. Bids Sept. 19. CD 9/12.

▲† **ALASKA**—Bureau P. Rds., Dpt. Commerce, Juneau,
M. J. Kuney Co., 235 9th Ave. N., Seattle 1, Wash., LB. **$1,027,144**, bit. surf. 32.95 mi. Seward-Anchorage Hy. from Mile 58 to Girdwood, Proj. C1, D1, E1, F4.

S. Birch & Sons, C. F. Lytle Co., and Green Constr. Co., Anchorage, Alaska, LB. **$1,068,870,** bit. surf. Seward-Anchorage Hy., Girdwood to Anchorage. Bids Sept. 18. CD 8/23.

U. S. POSSESSIONS

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **Carribean Enterprises**, P.O. Box 6168, Loiza St. Sta. Santurce, Puerto Rico, CA. **$1,000,000.** HOSPITAL, Charlotte Amalie, St. Thomas, Proj. 53-101. VIRGIN ISLANDS. Dpt Interior, Ofc. Territories, Dist. Eng. for Virgin Islands, P.O. Box 479, St. Thomas, Virgin Islands.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

Ont., Niagara Falls—TUNNEL—B.A. 10/16—Robert H. Saunders, CBE., KC., Chn and Members of Hydro-Electric Power Comn. of Ontario, 620 University Ave., Toronto 2, Ont., Sect. 5, hydraulic tunnel, approx. 3,680 ft. long of circular cross-section, concrete-lined, with 45 ft. finished diam., Sir Adam Beck—Niagara

Generating Station No. 2, Plans deposit $1,000. CD 9/5/50.

BIDS ASKED—BUILDINGS

† **Newfoundland**—HOSPITAL—Bids Asked—Dpt. Navy, 18 St. and Constitution Ave. N. W., Wash., 25, D. C., U. S. A., 1 and 2 story, 150 ft. long, T-shaped, with bsmnt. hospital, concrete fdn. Rennie & Horwood, Bd. of Trade Bldg., St. John's, Newfoundland, archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

N. C. Sherman Ltd., 1556 W. Pender St., Vancouver, B. C., **$72,710** (1);
B. C. Metals Ltd., PBX 104 St., and 102 Ave., Edmonton, Alta., **$98,606** (2);
National Iron Corp., Ltd., 324 Cherry St., Toronto, Ont. CA, **$73,720** (3), water sys., EDMONTON, ALTA. City, Municipal Bldg., Edmonton, Alta. Awarded Sept. 18.

▲**J. P. Porter & Sons, Ltd.**, 101 St. Catherine St. W., Montreal, Que., LB, **$1,228,959**, railway wharf repairs SUMMERSIDE, P.E.I. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Awarded Sept. 20. CD 8/30.

QUEBEC—Province of Quebec, Quebec City, Que.
Verochis Ltd., 4340 Rosedale Ave., Montreal, Que., CA, **$198,138**, 3 mi. road between Ste. Claire and Ste. Germaine, Dorchester Co. E. Gohier, Dpt. Roads, Quebec City, engr.

Lakeshore Constr. Co. Ltd., 137 Cartier Ave., Point Claire, Que., CA, **$130,000**, water mains, etc., POINTE CLAIRE, QUE. Municipality, Pointe Claire, Que. M. Heureux, Town Hall, town engr.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Bennett & White Calgary Ltd.**, 1120 Ninth Ave. W., Calgary, Alta, CA, **$816,666**, 4 SCHOOLS; **Pratt Constr. Co.**, 625 25 Ave., N.W., Calgary, Alta., CA, **$552,100**, 2 SCHOOLS, CALGARY, ALTA. Calgary School Bd., City Hall, Calgary, Alta. Awarded Sept. 19. CD 11/17/50.

▲ **Anglin Norcross Co.**, 472 Clarence St., London, Ont., CA, **$2,500,000**, 5 story, 40x325 ft., bsmnt., with 3 wings, two 4 story, 36x100 and one 3 story 36x100 ft., brick, concrete MOTHER HOUSE and BOILER HOUSE, LONDON, ONT. Sisters of St. Joseph Mother Mary in charge, London, Ont. Awarded Sept. 20 CD 10/27/50.

Austin Co. Ltd., 2 E. King St., Toronto, Ont., CA **$250,000**, electrical SUB-STATION and 2 buildings remodeled; **$175,000**, pumphouse, etc., SARNIA, ONT. Dow Chemical Co. of Canada Ltd., 204 Richmond St., Toronto, Ont. CD 4/1/47

Bennett-Pratt Ltd., 5 Maple Leaf Dr., Weston, Ont., LB, total est., **$750,000**, 2 story, bsmnt., 100-bed 42x187 ft., steel, brick HOSPITAL, administration section, TORONTO, ONT. Northwestern General Hospital c/o Dr. S. J. Rowley, chn., 2700 Eglinton Ave. N.W., Toronto, Ont. Bids Aug. 24. CD 8/20.

▲ **Mollenhauer Contg. Co. Ltd.**, 188 Perth Ave., Toronto, Ont., CA, Est. **$1,500,000** superstructure, Central HEATING PLANT, TORONTO, ONT. University of Toronto, Simcoe Hall, Toronto, Ont. H. G. Acres & Co., 2135 Culp St., Niagara Falls, Ont., engr., Gordon S. Adamson, 906 Yonge St., Toronto, Ont. archt. Awarded Sept. 19. CD 1/20/47.

▲ **Eastern Constr. Co. Ltd.**, Box 161, Walkerville, Ont., CA, **$2,520,000**, six 1 story, 186x326 ft., timber and cement rack WAREHOUSES, WINDSOR, ONT. Hiram Walker & Sons Ltd., 2067 Sandwich St. East, Windsor, Ont. Smith, Hinchman & Grylls, Inc., Marquette Bldg., Detroit, Mich., archt. Awarded Sept. 19. CD 7/26/50.

J. L. E. Price & Co. Ltd., 680 W. Sherbrooke St., Montreal, Que., CA, **$300,000**, 30,000 sq. ft., rein.-con., brick FACTORY, DORION, QUE. Pasaulds Ltd., London, England. Wood & Langston, 444 W. Sherbrooke St., Montreal, Que., archts.

PROPOSED PROJECTS

WATER SUPPLY

Calif., Concord—City, bond election Oct. 30, water supply sys. and irrigation for 1,400 homes. **$800,000.**
Calif., Pittsburg—City, voted **$830,000** bonds, 8 m.g. per day water filtration plant and 6 m.g. reservoir. C. C. Kennedy, 604 Mission St., San Francisco, consult. engr. CD 7/9.
Alaska, Palmer—Alaska P. Wks., Dpt. Interior, Juneau, imprv. water sys. with incidental street work. **$500,000.**

SEWERS, WASTE DISPOSAL

Calif., Pittsburg—City, voted **$725,000** bonds, sewage disposal plant. L. H. Cook, 950 Crane St. Menlo Park, consult. engr. CD 7/9.
Colo., Boulder—City, bond election Nov. 6, approx. 3 MGD sewage treatment plant. **$411,000.** Phillips-Carter-Osborn, Inc., 602 Insurance Bldg., Denver, consult. engr. and archt. CD 12/7/50.
▲ **Ill., Chicago**—Sanitary Dist. of Chicago, 910 Michigan Ave., Zone 5, pumping station at Roosevelt Rd. and Gardner St., removing 2 stations, **$800,000;** sewage works, earthwalled lagoons, 16 ft. deep, for sludge removal on 86 acres near South-West Side Pumping Station, **$450,000;** Harms Road Extension No. 2, 18,000 ft. sewers near Lake Ave. in Wilmette and Voltz Rd. in Northbrook, **$1,000,000;** sewers in

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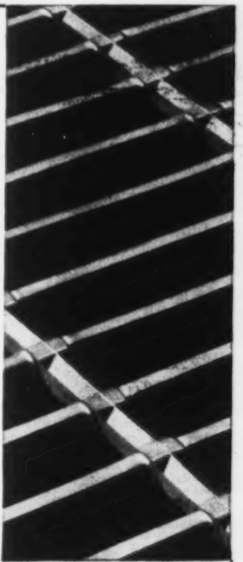

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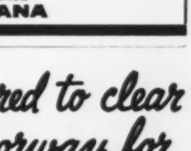

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Lawrence Ave. between Des Plaines River and Harlem Ave., near Chicago, **$400,000;** sewer work, Upper Des Plaines Sewer 11, from River Rd. to Central Rd., Mt. Prospect, **$2,000,000.** CD 2/8.

▲ **Mo., St. Louis**—City, Frank J. McDevitt, pres. Bd. Pub. Service, 304 City Hall, 12 and Market Sts., Zone 3, sewage pumping station, on local ground adjacent to jct. River Des Peres and Mississippi Rivers at south end of city limits, **$1,700,000.**

▲ **N. Y., Mineola**—Bd. Supervs., Nassau Co., Old County Court House, sewage collection sys. at Baldwin, **$9,258,450,** Clarence MacCullum, 299 Main St., Port Washington, consult. engr.; sewage collection sys. at Floral Park, **$4,630,200,** Nussbaumer, Clark & Velzy, Inc., 52 Vanderbilt Ave., New York, Zone 17, consult. engrs. CD 11/13/44.

▲ **N. Y., Mineola**—Bd. Suprvs. Nassau Co., Old County Court House, Franklin Ave., sewage collection sys., Woodmere-Hewlett, **$6,403,035.** CD 11/13/44.

▲ **Tex., Fort Worth**—City, City Hall, voted bonds, storm sewers, **$2,500,000;** Incinerator No. 1, **$300,000;** Incinerator No. 2, **$350,000;** Incinerator No. 3, **$150,000;** C. M. Thelin, Dir. P. Wks. Eng. CD 7/25.

▲ **Tex., Galveston**—PLANT—City, City Hall, sewage disposal plant, **$1,500,000.** Joe J. Rady, 811 Industrial Bldg., Fort Worth, consult. engr. CD 6/16/47.

† **Alaska, Fairbanks**—Alaska P. Wks., Dpt. Interior, Juneau, sewer for area served by Alaska Housing Auth. **$480,000.**

BRIDGES

▲ **Colo., Denver**—City and Denver Co., City and County Bldg., Denver, 14 street viaduct and 14 St. and Larimer St., incl. building lid over 2 block of Cherry Creek or an alternate plan involving 9 blocks of paving along south side of Cherry Creek, **$1,000,000.** Terry Owens, city engr. CD 2/21/45.

▲ **PENNSYLVANIA**—State Hy. and Bridge Auth., 506 N. Office Bldg., Harrisburg,

Berks Co.—construct bridges on Hambury By-pass, Rte. 122. **$3,000,000.** S. P. Longstreet, c/o owner, ch. engr.

STREETS AND ROADS

▲ **Mich., Detroit**—Wayne Co. Road Comrs., John P. O'Hara, chn., Cadillac Tower, grade separation at Beach Rd. and Hines Dr. and c. conc. paving Beach from Schoolcraft to Joy Sts., 10,560 ft. long, **$500,000;** 1 mi. 32 ft. dual lane c. conc. paving Mack from Severn to Vernier Sts., replace old pavement on Mack between Vadieux and Macomb Co. line, **$670,000;** wid'n. 3.2 mi. Fort Street from Sibley to Van Horn, incl. paving with c. conc., addnl. width 22 ft., **$750,000;** wid'n. Middlebelt St. by 12 ft. on 1 side 5 mi. long between Plymouth and Eight Mile Rd., **$200,000;** grading, b. conc. paving 22 ft. wide on 3 mi. Newburgh Rd. from Michigan Ave. to Ford St., incl. hy. bridge, **$400,000;** b. conc. 3,696 ft. Seven Mile Rd. between Livernois and Ponchartrain, **$150,000;** wid'n. 1 mi. Six Mile Rd. between Westmoreland and Grand River by building 32 ft. addnl. width of surf., **$170,000;** c. conc. paving 5,280 ft. Van Horn Rd. from Fort to Jefferson Ave., **$210,000,** Leroy C. Smith, 3800 Cadillac Cadillac Square, consult. engr. CD 4/11.

OKLAHOMA—State Hy. Dpt., Capitol, Oklahoma City, Zone 5.

Oklahoma Co.—2.85 mi. four-lane hy. on U.S. 77. **$600,000.** G. H. Bittle, c/o owner, consult. engr. CD 10/16/50.

▲ **OKLAHOMA**—Oklahoma Turnpike Auth., 100 N. E. 23 St., Oklahoma City 5, Okla.

Creek Co.—paving 4.532 mi. from northeast city limits of Sapulpa and extending northeast, **$800,000.**

Lincoln Co.—paving 8.625 mi. from 6.3 mi. southwest of the Stroud interchange and exten. northeast, **$1,700,000.**

Oklahoma Co.—paving 8.039 mi. from 8 mi. northeast of Oklahoma City terminus and extending northeast, **$1,500,000;**

paving 7.846 mi. from Oklahoma City terminus and exten. northeast, **$1,400,000.** DeLeuw, Cather & Co., 150 N. Wacker Dr., Chicago 6, Ill., engrs. CD 6/22/50.

▲ **PENNSYLVANIA**—State Hy. and Bridge Auth., 506 N. Office Bldg., Harrisburg,

Lancaster Co.—construct completion Lancaster By-Pass (Rte. 230) from point north of Lancaster to Rte. 30 east of the city, 4.21 mi. **$3,600,000.**

Lawrence and Beaver Counties—construct 7.07 mi. Turnpike Feeder Road from Moravia to Koppel, Rtes. 77 and 14, **$1,900,000.**

Lehigh Co.—construct portion Allentown By-Pass from 26 St. to Lehigh River, **$3,000,000.**

Northampton Co.—construct portion Allentown By-Pass (Rte. 22) from Easton to Five Points, **$4,500,000.**

Philadelphia Co.—construct Schuylkill Expressway 3.6 mi. City Line to Roosevelt Blvd. and Roosevelt Blvd. to Girard Ave., Two projects, **$20,000,000.** S. P. Longstreet, c/o owner, ch. engr.

▲ **Tex., Fort Worth**—City, City Hall, voted bonds, street extens., **$3,250,000;** street wid'n. program, **$2,720,000;** street paving, **$4,850,000.** C. M. Thelin, Dir. P. Wks. Eng. CD 7/30.

Tex., Houston—Southern Builders, Inc., 1200 Givens St., hard paved open parking area for automobiles

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In shopping center area Holmes and Griggs Rds. **$500,000.**

EARTHWORK, WATERWAYS

▲ † **Utah**—Bureau Reclamation, Dpt. Interior, Bldg. 1A, Denver Federal Center, Denver, Colo., construct Emery County Reclamation Proj., Joe's Valley Dam, Cottonwood Creek, Swasey Diversion Dam and Huntington Canal. **$7,840,000.** CD 9/7/44.

AIRPORTS

▲† **Colo., Colorado Springs**—AIR BASE—U. S. Eng., 1709 Jackson St., Omaha, Neb., Ent Air Force Base, **$2,000,000.** Edwin A. Francis, 218 Forest Dr., Denver, engr. and archt. CD 9/6.

▲† **Idaho, Mountain Home**—AIRFIELD PAVING, etc.—U. S. Eng., Bldg. 602, City-County Airport, Walla Walla, Wash., airfield paving, troop housing, hospital, communications, operations bldg., etc. at Mountain Home Air Force Base, **$19,000,000.**

▲ † **La., Lake Charles**—AIRPORT FACILITIES—U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex., plans by Ricciuti, Stoffle & Assoc., Queen & Crescent Bldg., New Orleans, BOQ bldgs., hangar, officers mess, laundry and wing headquarters bldg. at Lake Charles Air Force Base, **$1,000,000.**

▲† **Me., Limestone**—AIRPORT FACILITIES—U. S. Eng., 857 Commonwealth Ave., Boston, Mass., plans by Alonzo J. Harriman, Inc., 292 Court St., Auburn, addnl. facilities at Limestone Air Force Base, **$19,180,000.** CD 9/13.

▲† **Mont., Great Falls**—AIRPORT FACILITIES—U. S. Eng., Bldg. 602, City-County Airport, Walla Walla, Wash., airfield paving, troop housing, communications, operations bldg., hospital, etc. Great Falls Air Force Base, **$10,151,000.**

▲ † **N. J., Lakehurst**—SHOP—Dpt. Navy, P. Wks. Office Phila. Naval Base, Phila., Pa., plans by Carroll Grisdale & Van Alen, 204 Rittenhouse Sq. Phila., Pa., overhaul shop at Naval Air Station, **$2,500,000.**

▲ **Okla., Tulsa**—RUNWAY—Douglas Aircraft Co., Inc., 3000 Ocean Park Blvd., Santa Monica, Calif., 200x10,000 ft. concrete runway. **$6,000,000.**

▲ † **Pa., Phila.**—SUPPLY DEPOT—Dpt. Navy, P. Wks. Office, Phila. Naval Base, plans by Baader, Young & Schultze, 1500 Walnut St., Naval Aviation Supply Depot and addnl. facilities, General Service Supply Office. **$2,054,000.**

▲† **S. C., Charleston**—AIR BASE FACILITIES, etc.—U. S. Eng., Custom House, paving, fuel storage, communications, navigational aids, lighting, aircraft maintenance, training and troop facilities, family housing admin. bldg., utilities, storage, Charleston Air Force Troop Carrier Base, **$28,444,000.** Patchen & Zimmerman, Daniel Field, Augusta, Ga., consult. engrs. CD 9/6.

▲ **Tex., Fort Worth**—AIRPORT—City, City Hall, voted bonds, new International Airport unit. **$1,750,000.** C. M. Thelin, Dir. Pub. Wks. Eng. CD 7/25.

▲ † **Vt., Burlington**—AIRPORT—U. S. Eng., 857 Commonwealth Blvd., Boston, Mass., plans by Freeman-French & Freeman, 138 Church St., buildings, utilities, facilities at Burlington Airport. **$1,069,000.**

▲† **Wash., Moses Lake**—AIRFIELD PAVING, etc.—U. S. Eng., Bldg. 602, City-County Airport, Walla Walla, airfield paving, troop housing, communications, operations bldg., etc. at Larson Air Force Base, **$18,000,000.**

† **Wash., Spokane**—TROOP HOUSING, etc.—U. S. Eng., Bldg. 602, City-County Airport, Walla Walla, Wash., troop housing, communications, etc. at Geiger Air Force Base, **$800,000.**

▲† **Wash., Spokane**—TROOP HOUSING, etc.—U. S. Eng., Bldg. 602, City-County Airport, Walla Walla, troop housing, communications, etc. at Fairchild Air Force Base, **$18,000,000.**

▲† **Wyo., Cheyenne**—AIR BASE HOSPITAL, etc.—U. S. Eng., 1709 Jackson St., Omaha, Neb., hospital addn., **$750,000;** dispensary and clinic bldg., **$102,000;** 3 technical training bldgs., **$1,500,000,** all at Francis E. Warren Air Force Base. Porter & Bradley, 1009 E. Lincolnway, Cheyenne, Wyo., consult. engrs. and archts.

LATIN AMERICA

Mexico, Tlaxiaco—Bank of Mexico 5 de Mayo, 2, Mexico City, plans iron and steel works. **$500,000.**

PUBLIC BUILDINGS

▲ **Ala., Montgomery**—OFFICE—State, Montgomery plans by Warren, Knight & Davis, Protective Life Bldg., Birmingham, state office bldg. **$3,500,000.** CD 4/15/47.

▲† **Ark., Fort Smith**—TRAINING FACILITIES, etc.—Dpt. Army, Pentagon Bldg., Wash., D. C., training facilities, utilities at Camp Chaffee, **$1,942,900.**

▲† **Ark., Little Rock**—CAMP REHABILITATION—U. S. Eng., 300 Broadway, Little Rock, plans by Tropp & Clippaul, Pyramid Bldg., rehabilitate Camp Robinson **$3,000,000.** Max A. Mehlburger, Pyramid Bldg., consult. engr.

† **Ark., Pine Bluff**—ARSENAL—Dpt. Army, Pentagon Bldg., Wash., D. C., work at Pine Bluff Arsenal, **$640,000.**

▲ **Calif., Bakersfield**—COLLEGE CAMPUS—Kern County Union High & Junior College Dist., Bd. of Trustees Theron McCuen, supt., 1341 F St., plans by Wright, Metcalf & Parsons, 111 Morgan Bldg., Bakersfield College Campus, at Mount Vernon and Haley Sts. **$4,000,000.**

Calif., Bakersfield — SCHOOL — Lerdo Elementary School Dist., Minter Village, Bakersfield, plans by Wright, Metcalf & Parsons, 111 Morgan Bldg., school on 20-acre site east of Minter Village at outskirts of town ,**$800,000.** CD 12/8/50.

▲ **Calif., Palo Alto**—SCHOOL—Palo Alto City Unified School Dist., Box 149, plans by Birge M. Clark & Walter Stromquist, 321 Channing Ave, Palo Alto, Wilbur Junior High School, **$1,000,000.** CD 4/5.

Calif., Vallejo—SCHOOL—Vallejo City Unified School Dist., 640 Carolina St., plans by Masten & Hurd, 526 Powell St., San Francisco, Fleming Ranch School, Tuolumne St. **$500,000.** CD 5/16/50.

▲† **Colo., Pueblo**—DEPOT—U. S. Eng., 1709 Jackson St., Omaha, Neb., 120 concrete arch magazines for storage of ammunition, **$4,000,000;** Pouty Brothers, Exchange Bldg., Denver, Colo., consult. engrs. and archts.; warehouse **$480,000,** Walter De Mordaunt, Thatcher Bldg., Pueblo, Colo., consult. engrs., both projects at Pueblo Ordnance Depot. CD 1/15.

▲ **Ga., Atlanta**—OFFICE—State Dpt. Agriculture, State Capitol, plans by A. Thomas Bradbury, 60 5 St. N. E., agriculture office bldg. **$1,750,000.**

▲ **Ind., Indianapolis** — GARAGES, ETC. — City, 2 parking garages and 3 open air parking lots, **$3,500,000.** Ramp Buildings Corp., New York, N. Y., consult. engr. CD 2/18/47.

▲ † **Ind., New Haven**—WAREHOUSE, etc.—Dpt. Army, Pentagon Bldg., Wash. 25, D. C., 200x1000 ft., warehouse equipment processing bldg., central heating plant expanded railroad tracks, roads, parking area at Casad Engineer Depot, near here, **$2,250,000.** A. M. Strauss, Inc., Strauss Bldg., Fort Wayne, Ind., archt. and engr. CD 7/18.

† **Md., Camp Detrick**—SCHOOL—U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C., plans by Berla & Abel, 1636 Connecticut Ave. N. W., Wash., D. C., 2 story, bsmnt., 87,000 sq. ft. rein.-con., structural steel C.I.C. Training School, incl. roads, parking areas, utilities, **$900,000,** H. Walter Redmile, 2017 Maryland Ave., Baltimore, mech. engr. CD 11/17/50.

▲† **Mich., Detroit**—PLANT—Dpt. Navy, 18 St. and Constitution Ave. N.W., Wash. 25, D. C., plans by Albert Kahn Associated Architects & Engineers, Inc., 345 New Center Bldg., Detroit, plant for assembly and testing of jet aircraft engines on 306 acre tract in Sterling Twp., McComb Co., west of Detroit, **$30,000,000.** Plant to be operated by Chrysler Corp., 1220 E. Jefferson St. CD 9/4.

Mich., Lakeview—SCHOOL—Bd. Educ., brick, masonry high school, **$500,000.**

▲ † **Miss., Camp Shelby**—TROOP FACILITIES—U. S. Eng., P.O. Box 1169, 2301 Grant St., Mobile 7, Ala., plans by Landry & Matthes, Hattiesburg, troop facilities, incl. warehouses, mess halls, etc. **$7,000,000.**

▲† **N. J., Trenton**—LABORATORY FACILITIES—Dpt. Navy, P. Wks. Office, Phila. Naval Base., Phila., Pa., plans by Frank Grad & Sons, 11 Commerce St., Newark, N. J., and Burns & Roe Inc., 233 Broadway, New York, N. Y., naval aero turbine laboratory additional facilities **$8,400,000.** CD 11/19/47.

N. Y., New York—SCHOOL—Bd. Educ., 110 Livingston St., Brooklyn, Zone 1, plans by William I. Hohauser, 151 W. 51 St., Zone 19, P. S. 121 alterations, addns., 230-40 E. 103 St., **$800,000.**

▲ **N. Y., New York**—HOSPITAL—Dpt. P. Wks., Municipal Bldg., Zone 7, plans by Chapman, Evans & Delehanty, 50 Broadway, Zone 4, new 12 story bldg. for Seton Hospital, W. 232 St. and Palisades Ave. **$9,000,000.**

▲ **N. Y., New York**—HEALTH CENTER, etc.—Dpt. P. Wks., Municipal Bldg., Zone 7, plans by Farkas & Barrow, 150 Broadway, Zone 7, 5 story health center and clinic Foulton Ave., south of 169 St., Proj. HL-6. **$1,020,000.** CD 8/17/45.

N. C. New Bern—TRYONS PALACE—State Dpt. Conservation & Development, George Ross, dir., Raleigh, plans by W. G. Perry, 31 St. James Ave., Boston, Mass., restoration of Tryon's Palace. **$750,000.** CD 3/16/45.

▲ **N. C., Raleigh**—WOMENS PRISON—State Womans Prison, Walter Anderson, Dir., Raleigh, plans by Holloway, Weber & Reeves, Hillsboro St., 1st Part expansion program, cottages, gymnasium-chapel; administration bldg., central heating plant, **$1,120,500.** CD 5/31.

O., Cleveland—MORGUE—Bd. Comrs., Cuyahoga Co. Court House 1 Lakeside Ave., Zone 13, plans by Garfield, Harris, Robinson & Schafer, 1740 E. 12 St., Zone 14, 2 story, 77x112 ft., brick, steel morgue. **$745,000.** $350,000 bond election in November. CD 3/25/46.

O., Fredericksburg—HIGH SCHOOL—Bd. Educ., Southeast School Dist., Fredericksburg, **$690,000** bond election Nov. 5, high school for Old Fredericksburg, Sale Creek and Mt. Eaton School Districts now consolidated.

▲ **O., Girard**—SCHOOLS—Bd. Educ., Girard, **$1,395,000** bond election Nov. 6, schools.

O., Youngstown—SCHOOLS—Bd. Educ., Austintown School Dist., Youngstown, **$800,000** bond election Nov. 6, schools. CD 10/18/50.

▲ **Pa., Morgan** — HOUSING — Allegheny Co. Housing Auth., County Bldg., Pittsburgh, plans by Joseph Hoover, 333 Blvd. of Allies, Pittsburgh, 100 family type housing. **$1,500,000.**

▲ **Pa., Phila.**—SCHOOL—Bd. Educ., 21 and Winter Sts., plans by David Supowitz, 246 S. 15 St., school, Providence Ave., Pickering St., etc. Approx. **$1,000,-**

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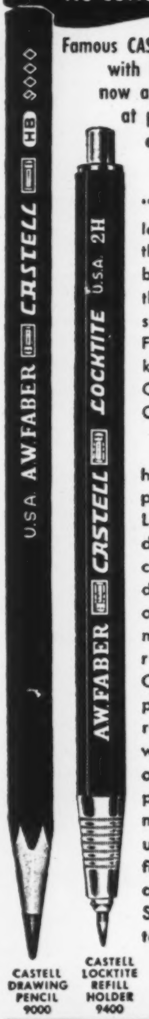
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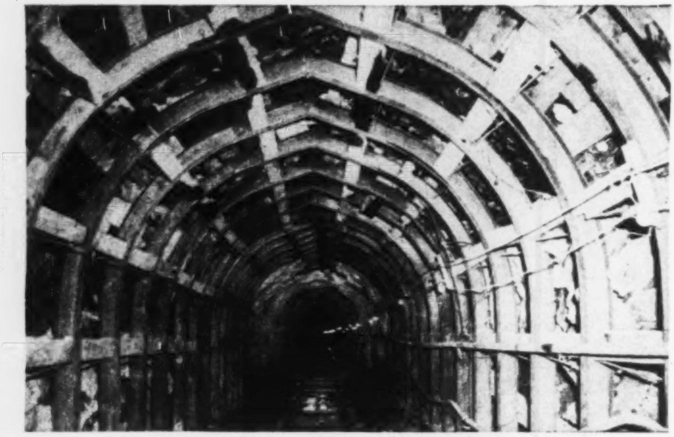

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000. Shander Berger, 246 S. 15 St., assoc. archt. CD 2/8/45.

Pa., Sharpsburg—HOUSING—Allegheny Co. Housing Auth., County Bldg., Pittsburgh, plans by Cozza, Critchfield & Pepine, 316 Hays St., Pittsburgh, 3 story brick 64 unit apartment. **$500,000.**

Pa., Sharpsville—HOUSING—Mercer Co. Housing Auth., Farrell, plans by Clepper & Mallorie, 54 Buhl Blvd., Sharon, 2 story, row type brick veneer housing. **$500,000.**

▲ **Pa., Sturgeon** — HOUSING—Allegheny Co. Housing Auth., Court House, Pittsburgh, plans by Joseph Hoover, 333 Blvd. of Allies, Pittsburgh, 100 family unit housing. **$1,500,000.**

▲ **Pa., Turtle Creek**—HOUSING—Allegheny Co. Housing Auth., County. Bldg., Pittsburgh, plans by Marks, Simboli & Fisher, Oliver and Wood Sts., Pittsburgh, 1-2-3 bedroom apartments **$3,000,000.**

▲ † **S. C., Beaufort**—HOSPITAL—Dpt. Navy, Officer in charge of Constr. Box 365, Naval Base, Charleston, Naval Hospital imprvs. **$1,700,000.** CD 5/16/47.

▲† **S. C., Charleston**—HOSPITAL—Dpt. Navy, Officer in Charge of Constr. Box 365, Naval Base, Charleston, Naval hospital exten., rehabilitation. **$2,800,000.**

▲ **Tenn., Nashville**—HOUSING—Nashville Housing Auth., 700 S. 6 St., plans by Brush, Hutchinson & Ginn, 1609 Church St., 550 Negro housing unit; plans by Woolwine, Harwood & Clark, American Trust Bldg., 480 housing units for Whites, **$3,500,000.**

Tex., Abilene—HOSPITAL—Bd. for Texas State Hospitals & Special Schools, 45 and Lamar Sts., Austin, plans by Walter C. Moore, 45 and Lamar Sts., receiving hospital bldg. for Abilene State Hospital. **$700,000.**

† **Tex., Amarillo**—BUILDINGS—U. S. Atomic Energy Comn., Los Alamos, N. M., (A), one rein.-con. bldg.; (B) 2 underground concrete bldgs. (C) 4 misc. bldgs. (D) steel frame and transite bldg. **$750,000.**

▲ **Tex., Austin**—SCHOOLS—Austin Independent School Dist., c/o City School Bd., Austin, plans by Fehr & Granger, 502 E. 5 St., West Austin Junior High School between 10 and 12 Sts. off Exposition Blvd., **$1,200,000;** plans by Page, Southerland & Page, 602 West Ave., North Austin High School, **$1,425,000.** CD 11/15/50.

Tex., Austin—HOSPITAL—Bd. for Texas State Hospitals & Special Schools, 45 and Lamar Sts., plans by Walter C. Moore, 45 and Lamar Sts., receiving hospital unit for Austin State School, **$700,000.**

▲ **Tex., Austin**—HOSPITAL—Bd. for Texas State Hospital & Special Schools, 45 and Lamar Sts., plans by Walter C. Moore, 45 and Lamar Sts., medical and surgical units for Austin State Hospital. **$1,200,000.**

Tex., Big Spring—HOSPITAL—Bd. for Texas State Hospitals & Special Schools, 45 and Lamar Sts., Austin, plans by Walter C. Moore, 45 and Lamar Sts., senile and continued treatment hospital unit for Big Spring State Hospital. **$800,000.** CD CD 12/9/48.

Tex., Fort Worth—POLICE STATION, etc.—City, City Hall, defeated bonds, police station, jail **$500,000.** C. M. Thelin, Dir. Pub. Wks. Eng. CD 7/30.

Tex., Kerrville—HOSPITAL—Bd. for Texas State Hospitals & Special Schools, 45 and Lamar Sts., Austin, plans by Walter C. Moore, 45 and Lamar Sts., 300-bed hospital unit for Kerrville State Hospital. **$800,000.**

Tex., Laredo—SCHOOLS—Laredo Independent School Dist., Laredo, bond election Nov. 24, Jobs 1, 2, 3, elementary schools, **$300,000** each; remodeling school, **$325,000;** Junior-Senior High School unit, **$325,000.** CD 7/6.

Tex., Moody—HOSPITAL—Bd. for Texas State Hospitals & Special Schools, 45 and Lamar Sts., Austin, plans by Walter C. Moore, 45 and Lamar Sts., Austin, 200-bed unit for Moody State School for Cerebral Palsied Children. **$500,000.**

Tex., Nacogdoches—SCHOOLS—Nacogdoches Independent School Dist., Nacogdoches, high school unit, **$325,000;** elementary school, **$300,000;** grade school and addn to existing one, **$300,000.**

Tex., Terrell—HOSPITAL—Bd. for Texas State Hospitals & Special Schools, 45 and Lamar Sts., Austin, plans by Walter C. Moore, 45 and Lamar Sts., medical and surgical hospital unit at Terrell State Hospital. **$600,000.** CD 1/5/49.

▲ **Va., Alexandria**—HOUSING—Alexandria Redevelopment & Housing Auth., Cameron Valley, plans by Joseph Saunders, 121 S. Columbus St., 194-unit, brick, steel, row-type units, low rent public housing for Negro families on 8½ acre site bounded by N. Patrick, N. Columbus and First Sts. and the old Parker-Grey High School bldg. **$2,250,000.**

Va., Bristol—HIGH SCHOOL—City, Bristol, plans by A. L. Aydelott & Assoc., 1st Natl. Bank Bldg., Memphis, Tenn., high school, classroom-workshop bldg. Approx. **$750,000.**

▲ **Wash., Monroe**—DOMESTIC, etc.—State Dpt. P. Institutions, Olympia, rein.-con. domestic bldg., to house hospital, classroom, segregation and pre-parole cells, **$1,500,000;** and 66,000 sq. ft. fieldhouse, **$500,000** at Reformatory. CD 7/22/46.

▲ **Wyo., Casper**—SCHOOL—Natrona County High School Dist., Independent School Dist. 2, Casper, plans by Karl L. Krusmark, engr.-archt, 722 S. Center St., Junior High School. **$1,500,000.** CD 6/3/49.

▲ **Alta., Calgary**—HOUSING—City, J. M. Miller, clk., City Hall, plans by Rule, Wynn & Rule, 513 8 Ave., civic housing between 1 and 2 Sts. N E. and 36 and 40 Aves. **$1,500,000.** CD 9/19.

Ont., Downsview (Toronto)—RESEARCH CENTRE—R. P. Opie, c/o Defense Constr. Ltd., 44 Queen's Quay W., Toronto, 2B, Ont., plans by G. S. Adamson, 906 Yonge St., Toronto, defense research board medical research centre, Approx. **$500,000.** S. M. Connolly, c/o owner, engr.

Que., Lachute—HOSPITAL—Dpt. P. Wks., Quebec, City, Que. hospital, Approx. **$800,000.**

▲ **Que, Sherbrooke**—HOSPITAL—Hospice du Sacre Coeur, 204 Belvedere St. S., plans by J. Aime & A. Paulin, 71 Prospect St., 5 story hospital annex, **$1,400,000.**

COMMERCIAL BUILDINGS

▲ **D. C., Wash.**—BUILDING—Jerry Maiatico, 806 Connecticut Ave. N.W., plans by Matthew G. Lepley, 5230 Nebraska Ave. N.W., 10 story, three underground levels, 450,000 sq. ft. Matomic Bldg., 1717 N. St., N.W., **$5,000,000.**

Ind., Anderson—CHURCH—Spark Place Church of God, 8 and College Dr., plans by Hensel Fink, 1701 Arch St., Phila., Pa., brick stone church, **$750,000.** CD 8/12/49.

Mich., Niles—HOSPITAL—Pawating Hospital, Bd. Trustees, Niles, brick, steel hospital addn. **$600,000.**

▲ **Minn., St. Paul**—OFFICE—Mutual Service Insurance Co., 1923 University Ave., 7 story office exten. to present bldg. **$3,000,000-$4,000,000.**

N. Y., New York—CHURCH—Roman Catholic Church of St. Joan of Arc, 1372 Stratford Ave., New York, plans by Knappe & Johnson, 368 E. 149 St., Zone 55, 2 story church and school, 174 St. between Stratford and Morrison Aves. **$575,000.**

▲ **Tex., Amarillo**—CHURCH—First Baptist Church Congregation, Amarillo, plans by Rittenberry & Rittenberry, Fish Bldg., church addn. **$1,000,000.**

▲ **Tex., Dallas**—HOTEL—Jack C. Vaughn Enterprises, 4221 Cardinal St., 11 story bsmnt. hotel. **$1,500,000.**

Tex., Freeport—HOUSING—Harry Twombly, Freeport, 50 housing rental units, **$400,000;** 70 housing rental units, **$490,000,** adjacent to Avalon addn.

▲ **Tex., Houston**—DWELLINGS—C. W. Hickman, 6716 Hempstead Rd., Unit 1, 75 frame dwellings, concrete slab fdn. **$525,000;** Unit 2, 125 cedar shake dwellings, concrete slab fdn., **$875,000;** Unit 3, 85 frame, cedar shake dwellings, concrete slab fdn. **$595,000;** Unit 4, 115 asb. siding dwellings, concrete slab fdn. **$805,000,** in new area of Wesley Pl.

▲ **Tex., Houston**—SHOPPING CENTER—Southern Builders, Inc., 1200 Givens St., shopping center, 600x1,880 ft., masonry main bldg., on 26-acre tract, Holmes and Griggs Rds. **$20,000,000-$25,000,000.**

Tex., San Antonio—SYNAGOGUE, etc.—Agudas Achim Congregation, 108 E. Quincy St., plans by Malcolm G. Simons, 526 Aztec Bldg., and Jeremiah Schmidt, c/o Schmidt Bldg., New Braunfels, synagogue, **$600,000;** educational bldg., north side, between Belknap and San Pedro Sts., **$350,000.** CD 3/31/50.

W. Va., Clarksburg—CHURCH—First Methodist Church, Clarksburg, rebuilding church, **$500,000.**

Wis., Milwaukee—OFFICE—Square D Co., 4041 N. Richards St., Zone 12, plans by Grassold & Johnson, 734 N. Jefferston St., Zone 2, 1 story part bsmnt., 80x240 ft., office bldg. addn. **$600,000.**

Ont., Windsor—NURSES HOME—Grace Hospital Bd., W. R. Dalziel, chn., Windsor, 3 story nurses home, **$750,000.** CD 2/21/48.

Que., Laval-Sur-La-Lac—CLUB HOUSE—Laval-Sur-La-Lac Golf Club, Laval-Sur-La-Lac, reconstr. clubhouse, Approx. **$500,000.**

INDUSTRIAL BUILDINGS

▲ **Ark., Little Rock**—PLANT—Spartan Aircraft Co., 1900 N. Sheridan Rd., Tulsa, Okla., aluminum plant, **$102,000,000.**

▲ **Ind., Fort Wayne**—FACTORY—Dana Corp., Salisbury Axles Div., 4100 Bennet St., Toledo, O., factory addn. **$5,460,000.**

Ind., Michigan City—PLANT—Joy Mfg. Co., C. A. Patten, genl. plant engr., Oliver Bldg., Pittsburgh Pa., 1 story, 165x550 ft., masonry plant addn., 2 story, 50x90 ft., brick, concrete office bldg. **$600,000.** Sverdrup & Parcel, Inc., 915 Olive St., St., St. Louis, 1, Mo., consult. engr.

Ind., Valparaiso—FACTORY—McGill Mfg. Corp., Lafayette & Bush Sts., plans by Beine, Hall & Curran, engrs.-archts., 527 Broadway, Gary, Ind., 1 and 2 story, 81x160 ft., 136x270 ft., 50x82 ft., brick, structural steel, rein.-con. bearing factory addn. **$650,000.** CD 1/15.

▲ **N. Y., DeWitt**—STORAGE—Western Electric Co., Inc., DeWitt, storage, repair and distribution bldg. for telephone equip. **$2,367,000.**

O., Cleveland—LABORATORY—National Malleable & Steel Castings Co., 10600 Quincy Ave., Zone 60, plans by Dalton & Dalton & Assoc., Consult. engrs.-archts., Arcade Bldg., Euclid Ave., Zone 14, 14,000 sq. ft., 1 and 2 story, brick, steel physical testing laboratory, with railroad test tracks, on 5-acre tract adjacent to present plant. **$750,000.** CD 9/7.

R. I., Warwick—FACTORY—Hammel-Dahl Co., 243 Richmond St., Providence, plans by Samuel Lerner Assoc., 145 Wayland Ave., Providence, 1 story mill type approx. 200x280 ft., glass, cinder block factory, mfg. valves for oil refineries and atomic engineering. **$500,000.**

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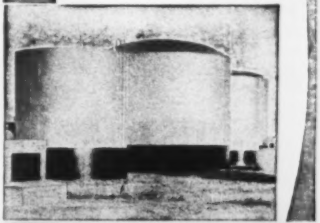

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Digging shovel capacity	3.5 cu. feet
Loading shovel capacity	5 cu. feet
Loading clearance, digging shovel, loaded	7 feet
Loading clearance, loading shovel	10 feet

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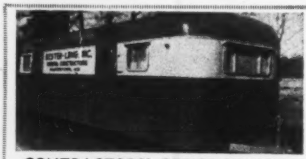

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Tenn., Union City—PLANT—Reelfoot Packing Co., Union City, plant addn. **$1,500,000.**

▲ **Tex., Daingerfield**—PLANT—Lone Star Steel Co., Daingerfield, plant unit for high-speed heat processing line for normalizing welded steel pipe. **$3,000,000.** The Selas Corp. of America, Erie Ave. west of D St., Phila. Pa., consult. engrs.

Tex., Dallas—PLANT—Trammel Crow, 425 S. Field St., plant, Oaklawn, Turtle Creek and Carpenter Sts. **$500,000.**

▲ **Tex., Houston**—CHEMICAL PLANT—Alamo Chemical Co. (General Analine & Flm Co., The Borden Co. and Phillips Co.), Irish Bend Island, chemical plant to produce anhydrous ammonia. **$38,260,000.**

Tex., Houston—PLANT—Shell Chemical Corp., Shell Bldg., elemental sulphur plant on Houston Ship Channel, near here.. **$500,000.**

Tex., Houston—PLANT, etc.—Standard Rice Milling Co., Butler St. and S. P. Ry. tracks, reactivation remodeling, imprvs. and expanding rice milling plant and storage. **$750,000.**

Tex., Port Neches—PLANT—Jefferson Chemical Co., Port Neches, ethylene glycol plant unit. **$750,000.** CD 2/26.

▲ **Tex., Texas City**—LABORATORY, etc.—Pan-American Refining Corp., Texas City, 2 and 3 story, masonry on steel frame, chemical engineering and research laboratory, **$650,000;** 2 story masonry on steel frame plant office. clock and payhouse, gate house, watchmens quarters, **$350,000.**

▲ **Tex., Texas City**—PLANT—The Texas City Chemicals, Inc., Texas City, chemical plant to mfg. dicalcium phosphate and sulphuric acid, 50 acre site purchased across from Longhorn Tin Shelter and option on addnl. 50-acre taken. **$1,500,000.**

▲ **Tex., Tyler**—PAPER MILL—Superior Paper Mills, Inc., c/o J. A. Johnson & Assoc., Tyler, odorless paper mill. **$2,500,000.**

▲ **Va., Charlottesville**—PLANT—Specialties, Inc., Skunks Misery Rd., Syosset, N. Y., plant. **$1,800,000.**

▲ **Wis., Green Bay**—POWER PLANT—Wisconsin Public Service Corp., Green Bay, steam power plant, **$12,000,000.** incl. equip.

Wis., Milwaukee—PARKING BLDG.—Owner c/o Leigh Hunt, archt., 3800 N. Humboldt Ave., Zone 12, 4 story, 180x250 ft. auto parking bldg. **$775,000.**

Que., Vald'Or — PLANT — Goden Manitou Mine Ltd., 330 Bay St., Toronto, Ont., concentrator plant, near here. **$750,000.**

Yukon Territory, Mayo—MINE EXPANSION—Mackeno Mines Ltd., Mayo, expansion at silver-lead-zinc mine in Mayo District **$500,000.**

UNCLASSIFIED

Minn., Brandon—TELEPHONE SYSTEM—Gordonville Co-operative Telephone Assn., Brandon, telephone sys., 180 mi. line, 12 mi. cable, four 1 story, 10x10 ft., exchange bldgs. Carl C. Crane, Inc., 2702 Monroe St., Madison, Wis., consult. engr.

▲ **Missouri**—RURAL DISTRIBUTION LINES, etc.—Northwest Electric Power Co-operative, Cameron, 40,000 kw. steam power generating plant at Missouri City and 257 mi. 157 KV and 505 mi. 69 KV rural distr. lines, **$5,477,000.** CD 3/2/50.

N. C., Holly Ridge—BROADCASTING STATION—State Dpt., 21 St. and Virginia Ave., N.W., Wash. 25, D. C., Voice of America Broadcasting Station on Old Camp Davis site in Onslow Co. near Pender Co. line, 30 mi. north of Wilmington, 4 sq. mi. area, 5,000,000 watts, near here.

▲† **S. C., Charleston**—TRAINING CENTER—Dpt. Navy, Officer in Charge of Constr., Box 365, Naval Base, Naval Reserve Training Center, **$262,502;** Naval Receiving Station exten., imprvs., **$2,200,000.**

† **S. C., Mt. Holly**—AMMUNITION DEPOT—Dpt. Navy, Officer in Charge of Constr., Box 365, Naval Base, Charleston ammunition depot exten., rehabilitation near here. **$805,780.**

▲† **S. C. Parris Island**—RECRUIT DEPOT IMPRVS.—Dpt. Navy, Officer in Charge of Constr., Box 365, Naval Base, Charleston, imprvs. at Marine Corps Recruit Depot. **$29,300,000.**

▲ **Tex., Fort Worth**—SIGNS SYSTEM, etc.—City, City Hall, voted bonds, street signs sys., **$250,000;** electric traffic signal sys., **$450,000;** street lighting, **$500,000;** fire dpt. electric alarm sys. exten., imprvs., **$500,000.** C. M. Thelin, Dir. P. Wks. Eng. CD 7/25.

▲ **Tex., Fort Worth**—PLAYGROUNDS, etc.—City, City Hall, voted bonds, recreation, playgrounds and facilities, **$500,000;** defeated bonds, West Side Park Development, **$250,000;** South Side Park Development, **$250,000;** East Side Park Development, **$250,000;** North Side Park Development, **$250,000.** C. M. Thelin, Dir. P. Wks. Eng. CD 7/25.

▲ **Tex., Houston**—TERMINAL FACILITIES, etc.—Port of Houston, c/o Wharf 13, completion facilities of terminal railroad, **$750,000;** railroad tracks extension, **$200,000;** new wharves, Approx. **$2,000,000;** spoil disposal plant units, **$1,000,000;** railroad car classification and storage, **$1,500,000,** inside 800-acres on Ship Channel. CD 8/28/47.

Utah, Salt Lake City—OIL STORAGE TANKS—Utah Oil Refining Co., Utah Oil Bldg., six 350,000 gal. oil storage tanks an 80 ft. stabilizer tower with pumping and pipe line equip. **$800,000.**

▲† **Wash., Aberdeen**—TRANSMITTER BLDG., etc.—Office of Public Affairs, State Dpt., 21 St. and Virginia Ave. N.W., Wash., 25, D. C., 2 story transmitter bldg., beam antenna, etc. for Voice of America Radio Station. **$5,000,000.**

CONSTRUCTION REPORTS-Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
STREETS AND ROADS
October 9, Massachusetts

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Halloran-Hollen & Riva Co., 1 Washington Ave., Providence, R. I., CA. **$505,500.** Contr. 2, sewage treatment plant and sewage ejector station, incl. equip. BURLINGTON, VT. City, Bd. Street Comrs., City Hall, Burlington, Vt. Bids Sept. 13. CD 9/19, under LB.

S. Cali Constr. Co., 2 Spruce St., Fitchburg, Mass. LB. **$35,000.** water mains, various streets, LEXINGTON, MASS. Town, Lexington, Mass. Bids Aug. 7.

MASSACHUSETTS — Commonwealth of Mass., Dpt. Pub. Wks., 100 Nashua St., Boston,

J. F. White Constr. Co., 201 Alewife Brook Parkway, Cambridge, Mass. LB **$184,904**, est. $180,000. hy. wid'n. Rte. 9, Framingham and Natick, Middlesex Co. Bids June 22. CD 6/13.

Campanella & Cardi Constr. Co., 780 Jefferson Blvd., Warwick, R. I., CA. **$491,418.** prepressed concrete steel pipe Southeasterly Trunk Line, from Dale Ave., Cranston to Fields Point, PROVIDENCE, R. I. City, City Hall, Providence, R. I. Bds Sept. 10, awarded Sept. 19. CD 9/14, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Turner Constr. Co., 36 Newbury St., Boston, Mass., CA. Approx. **$300,000.** STORAGE addn., top old bldg., CHICOPEE FALLS, MASS. U. S. Rubber Co., 560 Atlantic Ave., Boston, Mass.

Vappi Co., Inc., 246 Sidney St., Cambridge, Mass., CA. Approx. **$316,000.** MANUFACTURING BLDG., NEWTON, MASS.- Cabot, Cabot & Forbes, 60 State St., Boston, Mass.

▲**H. K. Ferguson Co.**, Hanna Bldg., Cleveland, O., CA. **$1,435,000.** PLANT, (Coltsville) PITTSFIELD, MASS. General Electric Co., General Electric Realty Co., 1 Plastics Ave., Pittsfield, Mass. Charles T. Main, Inc., 80 Federal St., Boston, Mass., engr. CD 12/20/50.

Walsh Constr. Co. Inc., 119 Webb St., Salem, Mass. LB. Approx. **$300,000.** TEMPLE, COMMUNITY CENTER, Lafayette St., SALEM, MASS. Congregation Sons of Jacob, 101 Essex St., Salem, Mass. Bids Aug. 29. CD 8/20.

▲ **Smith Constr. Co., Inc.**, 101 Water St., Derby, Conn., CA **$1,000,000,** department STORE, Chapel and Center Sts., NEW HAVEN, CONN. W. T. Grant Co., 1441 Broadway, New York, N. Y. CD 12/4/50.

Town, Bd. Educ., Town Hall, East Haven, Conn., rejected bids June 28, Elementary SCHOOL, Talmadge Ave.-Short Beach Rd., EAST HAVEN, CONN. LB **$516,938.** CD 7/6, under LB.

▲ **Associated Constr. Co.**, 1010 Wethersfield Ave., Hartford, Conn., LB, **$1,136,000,** Smith ELEMENTARY SCHOOL, NEW BRITAIN, CONN. City, New Britain, Conn. Bids Aug. 20.

▲ **Fusco-Amatruda Co.**, 59 Amity Rd., New Haven, Conn., CA, **$1,125,009,** ADMINISTRATION-CLASSROOM and LIBRARY bldg., B/A-R-47C; CA **$715,000,** physical education CLASSROOM BLDG., B/A-R-47 A, at State Teachers College, NEW HAVEN, CONN. State Dpt. P. Wks., State Office Bldg., Hartford, Conn. Bids July 6, awarded Sept. 20. CD 7/17, under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
STREETS AND ROADS
October 9 Maryland
October 11 Pennsylvania

N. Y., Brooklyn—PLAYGROUND—B.A. 10/10—Supt. School Bldgs., Design and Constr., 49 Flatbush Ave. exten. Zone 1, general constr. playground; plumbing and drainage for playground for P. S. 131, 172 St. between 83 and 84 Aves.

N. Y., Geneva—B.A. 10/10—Bureau Contracts & Accounts, Albany, sewer and water lines at State Agricultural Experimental Station. Plans deposit $10.

Pa., Mayview—STEAM and ELECTRICAL—DISTR.—B.A. 10/17—General State Auth., 18 and Herr Sts., Harrisburg, steam and electrical distr. lines at Mayview State Hospital. $600,000. Plans deposit $10. Peter F. Loftus Corp., 1st. Natl. Bank Bldg., Pittsburgh, Zone 22, engrs. CD 8/4/50.

BIDS ASKED—BUILDINGS

Pa., Johnsville—SCHOOL—B.A. 10/15—Warminster Twp. School Dist., Warminster, school and admin. bldg. $566,850. Davis Dunlap & Carver, 117 Sansom St., Phila. archts. CD 5/3.

▲ **Pa., Boothwyn**—SCHOOL—B.A. About 10/20—State Pub School Bldg. Auth., and Upper Chichester School Bd., Ogden, school. Approx. $1,300,000. Howell, Lewis, Shay, Packard Bldg., Phila., archts. CD 8/31/45.

SOON LETS CONTRACT—BUILDINGS

Pa., Pittsburgh—SHOPPING CENTER—Wm. Green, Route 51, Pleasant Hills, Pittsburgh, soon lets contract 1 story, L-shaped, approx. 52,000 sq. ft., brick, concrete stores and parking area, Pleasant Hills. $500,000. Charles Slater, 314 Columbia Bldg., archts. CD 8/17.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Henderickson Bros., 63 N. Central Ave., Valley Stream N. Y., CA. **$587,000.** trunk sewer, Valley Stream to Malverne, MINEOLA, N. Y. Bd. Supervs. Nassau Co., Old Court House, Franklin Ave., Mineola, N. Y. Bids Sept. 11. CD 9/20, under LB.

J. W. Marino, 439 Pearl St., Pittsburgh, Pa., LB. **$219,059,** Contr. 1, **$111,049,** Contr. 2, **$87,406,** Contr. 3 for water distr. sys., BEAVER, PA. Brighton Twp. Municipal Auth., Beaver, Pa., Bids Sept. 19. CD 9/10.

Marino Masse, 4418 N. American St., Phila., Pa., LB. **$71,197.** sewers, Schedule A-1 various locations;

M. P.Ventresca, 6112 Ross St., Phila., Pa., LB. **$82,259.** Schedule A-5, sewers, various locations;

D. & C. Spinosa Co., 2 N. Jerome St., Allentown, Pa., LB. **$174,989,** Schdeule B-1, sewers, various locations, PHILA., PA. Dpt. P. Wks., City Hall Annex, Phila., Pa. A. Zane Hoffman, c/o owner, ch. engr. CD 3/25/46.

▲ **Empire Constr. Co.**, 318 S. Calvert St., Baltimore, Md. 392 ft. extension to Pier 6, Port Covington Terminal; **Industrial Brownhoist Corp.**, 1[illegible]5 Washington St., Bay City, Mich. contract for crane, BALTIMORE, MD. Western Maryland R. R. Co., E. C. Shreve, ch. engr., Standard Oil Bldg., Baltimore, Md. Total est. cost **$1,782,500.** CD 12/13/50.

Curtin & Johnson, 1125 Brentwood Rd., N. E. Wash., D. C., LB. **$177,522,** c. conc. paving and cement concrete curb or alternates of Benning Rd., S. W. from E. Capitol St. to Hanna Pl.

Myers & Quigg, Inc., 925 12 St., N. E. Wash., D. C., LB. **$84,597,** construct directional islands, incl. reconstruction roadways and curb lines at various locations.

Corson & Gruman, 33 and K Sts., N. W. Wash., D. C., LB. **$191,707,** c. conc. pavmeent and curb or alternates, Wheeler Rd., S. E. from Alabama Ave. to Southern Ave., WASH., D. C.; Dist. Hy. Dpt., District Bldg., Wash. 4, D. C. Bids Sept. 10. CD 7/14/44.

DELAWARE—State Hy. Dpt., Dover,

Wilson Contg. Co., New Castle, Del., LB, **$689,923** c.conc. wid'n., hot mix resurf. 9.931 mi. Maryland Line to State Road, F.A. Proj. F 21 (6) and F-39 (0), Contr. 1073, New Castle Co.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Birchwood Garden Homes**, c/o Stanley Klein, archt., 89-31 161 St., Jamaica, N. Y. Owner Builds. **$1,000,000.** 120 one family HOUSES on 32 acre site, Front St., east of Merrick Ave., EAST MEADOW, N. Y.

▲ **Harnaby-Ardmore, Inc.**, c/o J. Herbert Burmeister, archt., 89-30 161 St., Jamaica, N. Y., Owner Builds. Approx. **$1,500,000.** 50 one family HOUSES on 22 acres at Grace Ave. and Court St., GREAT NECK, N. Y.

Arnold Slade, c/o John Burton & Assoc., archts., 163-18 Jamaica Ave., Jamaica, N. Y., Owner Builds. Approx. **$600,000.** 65 HOUSES on 14 acre site on South Oyster Bay Rd., north of Old Country Rd., HICKSVILLE, N. Y.

Summit Estate Homes, c/o Leonard G. Feinen, archt., 320 Linclon Ave., Hasbrouck Heights, N. J. Owner Builds. **$600,000,** 21 one-family homes, Summit St., ENGLEWOOD CLIFFS, N. J.

▲ **The Ferber Co.**, 16 Johnson Ave., Hackensack, N. J., CA **$3,500,000,** FACTORY and LABORATORY, MORRIS PLAINS, HANOVER TWP., N. J. Monroe Calculating Machine Co., 555 Mitchell St., Orange, N. J. Bids Aug. 22. Epple & Seaman 901 Broad St., Newark, N. J., archts. CD 8/20.

Deroe Builders Inc., c/o Roche & Roche, archts., 234 W. 44 St., New York, 19, N. Y., Owner Builds, **$300,000.** 24 HOUSES, tract bounded by Hamburg Turnpike and Wanaque and Pequannock Rivers, POMPTON LAKES, N. J.

F. Carroll White, Malvern, Pa., Separate Contracts. Approx. **$300,000.** RESIDENTIAL DEVELOPMENT, Righters Mill Rd., BALA-CYNWYD, PA.

▲ **North American Refractories Co.**, Natl. City E. 6th Bldg., Cleveland, O., Owner Builds. Approx. **$2,000,000.** REFRACTORY, new tunnel kiln and dryer, CURWENSVILLE, PA. Dwight Hendryx, Darlington Rd., Pittsburgh, Pa., engr.

McCloskey & Co., 1620 W. Thompson St., Phila., Pa., CA. Aoprox. **$300,000.** HOSPITAL addn. DARBY, PA. Fitzgerald Mercy Hospital, Darby, Pa. CD 8/13.

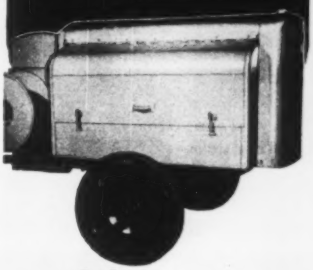
Maguire Constr. Co., 26 Ardmore Ave., Ardmore, Pa., CA. **$300,000.** RESIDENTIAL DEVELOPMENT Turnbull Ave., HAVERSTOWN, PA. Triems Co. Inc., c/o general contractor.

Kempen & Miller, 69 and Walnut Sts., Upper Darby, Pa., Separate Contracts. Approx. **$464,000.** RESIDENTIAL DEVELOPMENT, Garrison Ave., PARKSIDE, PA. Erling Wenge, McClatchy Bldg., Upper Darby, Pa., archt.

Hyman Korman, 6401 Castor Ave., Phila., Pa., Separate Contracts. **$300,000.** RESIDENTIAL DEVELOPMENT, Cheltenham Ave. and Large St., PHILA., PA.

A. P. Orleans Co., 100 W. Rockland St., Phila., Pa., Separate Contracts. Approx. **$300,000.** RESIDENTIAL DEVELOPMENT, Kerper St., PHILA., PA.

▲ **Turner Constr. Co.**, 1500 Walnut St., Phila., Pa., CA. **$1,400,000.** BANK bldg., 1716 Arch St., PHILA. PA. Central Penn Natl. Bank, 7 and Chestnut Sts.,



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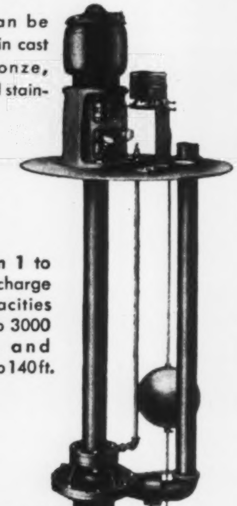

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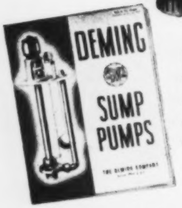

BULLETIN No. 4600-A includes selection tables, accessories and other information.

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Phila., Pa., William H. Gravell, 1700 Walnut St., Phila., Pa., engr. Robert Montgomery Brown, 1728 Spruce Ct., Phila., Pa., archt.

▲ **Sturm & Co.**, 4531 Front St., Phila., Pa., CA. **$7,000,000.** RESIDENTIAL DEVELOPMENT, Academy Rd., PHILA., PA. Northeast Country Club Estates, c/o contractor.

▲ **McCloskey & Co.**, 1620 W. Thompson St., Phila., Pa., CA. **$1,000,000.** 1 story irregular dimensions, brick, block WAREHOUSE, OFFICE bldg. and PRODUCE WAREHOUSE, PHILA., PA. Penn Fruit Co., 1919 Chestnut St., Phila., Pa. The Ballinger Co., 121 N. Broad St., Phila. Pa. archt. CD 10/11/50.

† **Hadley Contg. & Constr. Co.**, 1213 Wood St., Phila., Pa. LB **$547,226.** artillery and fire control SHOP, ABERDEEN PROVING GROUND, MD. U. S. Eng., 24 St. and Maryland Ave., Baltimore, Md. J. L. Faisant & Assoc., 21 W. 25 St., Baltimore, Md., archts. and engrs. Bids Sept. 20. CD 8/31.

▲**Baltimore Contractors, Inc.**, 711 S. Central Ave., Baltimore, Md., LB Base Bid **$3,444,600.** Alternate 1 plus **$510,000.** Alternate 2 plus **$1,830,000.** rebuilding 3 story, 75x674 ft. bldg. into 5 story INFIRMARY, Baltimore City Hospital, Eastern Ave., BALTIMORE, MD. City, Bureau Bldg. Constr., R. E. Williams, bldg. constr. engr., 410 Municipal Bldg., Baltimore 2, Md. Bids 12/20 rejected. CD 1/3 under LB.

▲ **Geo. A. Peters & Co.**, 2116 Maryland Ave., Baltimore 18, Md. CA on plumbing and heating OBRECHT BLDG., Harbor Field, Baltimore Signal Corps Depot, Dundalk; **Blumenthal-Kahn Electric Co.**, 43 S. Liberty St., Baltimore, Md. CA electrical work. Total est. cost **$1,000,000.** BALTIMORE, MD. U. S. Eng., 24 St. and Maryland Ave., Baltimore 18, Md. Turpin, Wachter & Assoc., 1004 N. Charles St., Baltimore, Md., archts. and engrs.

Wadsworth Corp., 4231 Greenmount Ave., Baltimore, Md. Owner Builds. **$617,500.** sixty-five 19x32 ft., masonry row type HOUSES, 1600 block Wadsworth Way and 5900 and 6000 block Hillen Rd., BALTIMORE, MD.

† **Smith DeCorse & Christhilf**, 510 York Rd., Baltimore, Md. LB **$568,174.** 2 story, bsmnt., 43x92 ft., concrete low temperature TEST CHAMBER, No. P 50-3, EDGEWOOD, MD. U. S. Eng., 24 St. and Maryland Ave., Baltimore 18, M. Bids Sept. 18 CD 9/13.

D. M. Fontana Constr. Co., 112 9 St., Wilmington, Del., CA **$552,085,** SCHOOL, CLAYMONT, DEL. Claymont Special School Dist., Claymont, Del. CD 9/19, under LB.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
STREETS AND ROADS
October 10 Louisiana

BIDS ASKED—BUILDINGS

Ala., Russellville—HOUSING—B.A. 10/16—Russellville Housing Auth., Russellville, 75 housing units $560,000. Extended date. Turner & Northington, Medical Arts Bldg., Florence, archts. CD 8/17.

SOON LETS CONTRACT—BUILDINGS

▲ **Ala., Birmingham**—HOSPITAL—Birmingham Baptist Assn., c/o Lawrence S. Whitten, archt. Brown-Marx Bldg., Birmingham, soon lets contract, hospital addn., Approx. $1,000,000. CD 9/18.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Vanguard Const. Corp.**, Ingleside St., Norfolk, Va., CA. **$177,204,** navigational aids, LANGLEY AIR FORCE BASE, VA. U. S. Eng., foot of Front St., Norfolk, Va.

▲† **Tidewater Constr. Co.**, 538 Front St., Norfolk, Va., CA. **$1,774,003,** aviation gas distr. sys. addns. at Craney Island Fuel facility, NOY 28431, NORFOLK, VA. Fifth Dist. P. Wks. Office, Norfolk, Va. CD 9/20.

▲† **Laburnum Constr. Corp.**, 918 E. Main St., Richmond, Va., CA. **$1,616,569.** Addnl. facilities at Naval Mine Depot, NOY 26917, YORKTOWN, VA. Pub. Wks. Office, Fifth Naval Dist., Norfolk, Va.

▲ **NORTH CAROLINA**—State Hy. & Pub. Wks. Comn., Raleigh, W. E. Graham & Sons, Cleveland, N. C., CA. **$2.301,093.** grading, relocation 6.15 mi. U. S. 70 from Ridecrest to Old Fort, Proj. 8521, Buncombe and McDowell Counties. Bids Aug. 28, awarded Sept. 21. CD 9/4, under LB.

SOUTH CAROLINA—State Hy. Dpt., Hotel Columbia, Columbia, **E. H. Hines Const. Co.**, Greenwood, S. C. CA. **$112,490,** S. C. Docket 11,288. FA Proj. FI-2575 (1), Cherokee Co. Bids Sept. 18. CD 9/7.

SOUTH CAROLINA—State Hy. Dpt., Hotel Columbia, Columbia,

Robert Lee, Inc., Manning, S. C., CA. **$175,405,** S.C. Dockets 5.265, etc. FA Proj. S-235 (2), Alt. 2, Bamberg Co.; CA. **$143,125,** S. C. Dockets 9.267, etc. FA Projects S-578 (1), etc., Calhoun and Orangeburg Counties; CA **$235,912,** S. C. Dockets 43,289, etc. FA Proj. S-572 (1) and S-349, Sumter Co.;

Dickerson, Inc., Monroe, N. C., CA. **$93,547,** S. C. Docket 16.271, etc., Darlington Co.

Spotts & Co. Inc., Newberry, S. C., CA. **$191,389,** S. C. Docket 23.331, Pts 1 and 2, FA Proj. F-2583 (1), Greenville Co. Grand total $839,378. Bids Sept. 18. CD 9/7.

Henry Newton Co., Decatur, Ga., CA, **$505,557** bridge over Southern Ry. and Nashville Chattanooga R. R. on Marietta St., ATLANTA, GA. Fulton Co., Court House, Atlanta, Ga. Bids Sept. 9.

Hugh McMath Constr. Co., Brennan Rd., Columbus, Ga., CA, **$263,879,** paving 17 streets, COLUMBUS, GA. City, Columbus, Ga. Bids Sept. 1. City 8/1.

† **George D. Auchter Co.**, E. 29 St., Jacksonville, Fla., CA, **$712,000,** jet maintenance SHOP at Naval Air Station, JACKSONVILLE, FLA. Sixth Naval Dist., Charleston, S. C. CD 2/1.

▲† **Beers Constr. Co.**, 70 Ellis St. N.E., Atlanta, Ga., CA, **$2,487,493,** vehicle and power equipment repair shop at Warner Robins Air Force Base, MACON, GA. U. S. Eng., P.O. Box 889, Savannah, Ga. Bids Aug. 7. CD 8/6, under LB.

▲ **TENNESSEE**—State Hy. Dpt., Nashville,

R. E. Martin, 317 5th Ave., S., Nashville, Tenn., LB, **$310,280,** crushed stone surf. 4.27 mi. sect. of State Rte. 61 from L. & N. underpass at Oak Ridge and extending 4.393 mi. toward Clinton, Anderson Co.

Foster & Creighton, American Natl. Bank Bldg., Nashville, Tenn., LB, **$257,760,** c. conc. 0.407 mi. sect. of State Hy. 58 on Dodson Ave. in Chattanooga from near Citico St. and extending to Cooley Ave., Proj. No. F 060-1-(1); construct concrete deck girder overhead and approaches over Southern Ry. in Chattanooga on Third St. from Collins to near Hampton Sts., 0.124 mi. Proj. No. F-060-1-(2), both Hamilton Co.

Pullen & Owens, 3rd Natl. Bank Bldg., Nashville, Tenn., LB. **$119,469,** grav. or 1 chert surf. 5.407 mi. sect. of State Rte. 57 from Mississippi State line and extending northward to Pickwick Dam, Proj. No. SAP-023-A, Hardin Co.; LB **$100,309,** grav. or chert surf. 7.5 mi. sect. of Secondary Rte. No. 8054 from Hardeman Co. line, approx. 6 mi. north of Whiteville to State Rte. 76 at Koko, Proj. No. SAP 933-A, Haywood Co.

Gatlinburg Constr. Co., Gatlinburg, Tenn., LB. **$427,601,** crushed stone surf. 3.521 mi. sect. of State Rt. No. 37 from near Blevins and extending southeastward to point 1 mi. west of Roan Mountain, Proj. No. SAP-927-A, Carter Co.; LB. **$190,904,** crushed stone surf. 5.052 mi. sect. of State Rt. 73 from Kenzill Springs and extending to Great Smoky Mountain Park, No. F-053-1-(4), Pt. II, Blount Co.

A. B. Long Constr. Co., Harriman, Tenn., LB. **$824,491,** crushed stone surf., construct 2 bridges 9.138 mi. sect. of State Rte. No. 6 from 1 mi. north of Columbia to Spring Hill, Proj. No. FI-006-2-(6), Maury Co.

Wright Contg. Co., 504, 25 Ave., Columbus, Ga., LB. **$315,893,** wid'n. and bit. materials resurf., and wid'n. concrete bridge 12 mi. on sect. State Rt. 33 from Georgia State line and extending to near Benton Station, Proj. No. SAP-924-A, Polk Co.

J. B. Michael & Co., 1021 Heywood St., Memphis, Tenn., LB. **$741,529,** wid'n.; resurf. existing c. conc. pavement with c. conc. and bit. materials, construct sidewalks, storm sewers and wid'n. present bridge over Cypress Creek 3.535 mi. State Hy. No. 57 (Poplar Blvd.) in Memphis from Aulon Viaduct and extending to Deloach St. and from point near Cherry Rd. to city limits, Proj. No. F-050-1-(1), Shelby Co.

Gallatin Paving Co., Hartsville, Tenn., LB, **$88,540,** application of mixed in place and seal 10 mi. sect. of State Rte. 50 from intersection of State Rt. 100 to near Buck Branch, Proj. No. SAP-938-A, Hickman Co.

John L. Brinkley, Shelbyville, Tenn., LB. **$230,015,** crushed stone surf., construct 4 bridges 6.743 mi. sect. of Secondary Rte. No. 4281, from N. C. & St. L. R. R. in Petersburg and extending eastward to State Rte. 10 at the Moore Co. line near Chestnut Ridge, Proj. No. S-4281 (1), Lincoln Co.; LB. **$100,$524,** crushed stone or gravel or chert surf. 4.435 mi. Sect. of Secondary Rte. 4253, from Lantana approx. 7 mi. southwest at Crossville and extending toward Bledsoe Co. line, Proj. No. S-4253 (4); construct bridge and approaches over Laurel Creek 4.653 mi. Secondary Rte. No. 4253, approx. 3.6 mi. southwest of Lantana, Proj. No. S-4253 (5). Cumberland Co. Bids Sept. 21.

BUILDINGS

LOW BIDS AND CONTRACTS

E. L. Daniels Co., 2112 N. Quincy St., Arlington, Va., CA. **$456,938**, Graham Rd. SCHOOL addn., on Graham Rd. off Lee Blvd., FAIRFAX, VA. Fairfax Co. School Bd., Fairfax, Va. Robert A. Willgoos, 123 N. Fairfax St., Alexandria, Va., archts. Bids Sept. 20, awarded Sept. 21. CD 6/6/50.

▲ **Bush Constr. Co.**, Flat Iron Bldg., Norfolk, Va., Owner Builds. Approx. **$1,150,000.** Ingleside Terrace HOUSING development, NORFOLK, VA.

▲ **Robert R. Marquis,** 2229 County St., Portsmouth, Va. CA. **$1,047,908,** Oakwood and Norview Elementary SCHOOLS, PORTSMOUTH, VA. Norfolk Co., Portsmouth, Va. Bids Aug. 31. CD 8/17.

Thorington Constr. Co., Inc., 205 E. Canal St., Richmond, Va., CA. **$527,700,** Southeastern Elementary SCHOOL, PORTSMOUTH, VA. Norfolk Co., Portsmouth, Va. Bids Sept. 7. CD 8/30.

▲ **John A. Robbins & Co., Inc.**, 10 S. 18 St., Phila. Pa., CA. **$10,000,000.** temporary HOUSING, AIKEN, S. C. E. I. du Pont deNemours & Co., Inc., duPont Bldg., Wilmington, Del., H. M. Gordon, c/o owner, archt.

J. A. Jones Constr. Co., 209 W. 4 St., Charlotte, N. C. LB. **$907,000.** CLASSROOM bldg., DURHAM, N. C. Duke University, Durham, N. C.

Lawndale Homes, Inc., c/o Charles West, Starmount Dr., Greensboro, N. C., Owner Builds. Approx. **$500,000.** RESIDENTIAL DEVELOPMENT, GREENSBORO, N. C.

McKoy-Wherry Co., 320 S. Hudson St., Greenville, S. C. CA. Approx. **$500,000.** DEPARTMENT STORE, GREENVILLE, S. C. W. T. Grant Co., 101 N. Main St., Greenville, S. C.

▲ **Eaton & Elzea Constr. Co.**, Panama City, Fla., LB, **$462,380,** FLA-18-1, HOUSING. **Henry C. Beck Co.**, First National Bank Bldg., Atlanta, Ga., LB, **$1,038,-**

000, FLA 18-2, HOUSING PANAMA CITY, FLA. Panama City Housing Auth., Panama City, Fla. Bids Sept. 20. C 9/6.

Sadowski & Son Constr. Co., Marathon, Fla, Owner Builds. Approx. **$500,000**, 154 HOUSING UNITS, MARATHON, FLA.

West Constr. & Eng. Co., 716 N. Federal Hy., Fort Lauderdale, Fla., CA, **$731,444**, construct, manage and finance HOUSING, at Alabama Ordnance Depot, ANNISTON, ALA. South Atlantic Div., U. S. Eng., P.O. Bldg., Atlanta, Ga. Bids May 16. CD 5/23, under LB.

Al. J. Schneider Co., 3720 7 St. Rd., Louisville, Ky. CA, **$300,000**. CHURCH, LOUISVILLE, KY. S. S. Simon & Jude Church, c/o contractor.

▲ **Sjostrom & Sons, Inc.**, 1718 7th Ave., Rockford, Ill. CA. Approx. **$3,000,000**. mfg. PLANT, MEMPHIS, TENN. Borg-Warner Corp., 310 S. Michigan St., Chicago, Ill.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

October 16, Wisconsin

STREETS AND ROADS

October 16, Ohio

BIDS ASKED—BUILDINGS

▲ **Wis., Milwaukee**—SCHOOL—B.A. 10/29—Bd. School Directors, 1111 N. 10 St., Milwaukee, 3, Wis., 1 story L-shaped, 112x257 ft. and 65x144 ft., N 95 St. School, $767,000; 1 story, L-shaped, 112x257 ft., 65x108 ft. Clement Ave. School, $714,000. Darby, Bogner & Assocs., 759 N. Milwaukee St., Milwaukee, Zone 2, and F. Von Grossmann, 4630 W. Burleigh St., Milwaukee, 10, Wis., archts. CD 8/10/50.

▲ **Mich., Saginaw**—HIGH SCHOOL—Bids Asked—Bd. Educ., Saginaw, 2 story, bsmnt., brick, steel, concrete East Side High School. $2,500,000. Frantz & Spence, 118 N. Washington Ave., archts. CD 12/11/50.

SOON LETS CONTRACT—BUILDINGS

Ind., Valparaiso—PLANT—McGill Mfg. Corp., Valparaiso, soon lets contract 1 and 2 story, 81x160 ft., 136x270 ft., 50x82 ft., brick, concrete bearing mfg. plant, $650,000. Beiner, Hall & Curran, 527 Broadway, Gary, Ind., engrs. and archts. CD 9/18.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **White Constr. Co.**, 1831 W. Columbia St., Chicago, 26, Ill., CA, **$2,408,180**, Beverly-Calumet Sewer Project Contr. 3-A, 110 Place between Laflin and Morgan Sts., on Prospect between Wood and Longwood Sts., CHICAGO, ILL. City, City Hall, Chicago, 2, Ill. Awarded Sept. 20. CD 3/1.

H. G. Goetitz, 5757 Ogden St., Chicago, 50, Ill., and **Municipal Paving Co.**, 5757 Ogden St., Chicago 50, Ill., CA **$145,849**, paving 74 St. Damen to Ashland Aves., CHICAGO, ILL. City, City Hall, Chicago, 2, Ill. Awarded Sept. 20. CD 6/7.

▲ **Lieb Brothers, Inc.**, 1100 McCarter Hy., Newark, N. J., LB, additional facilties, Schedule 1, airmen's dormitory, mess and admin., grading, paving, utilities, flood control imprvts.; Schedule 2, Bachelor officers quarters, academic bldgs., mess bldg., W. A. officers quarters, grading, paving, utilities; Schedule 3, lighting system, electrical distr. system; Schedule 4, airfield and roadway, paving, etc.; Schedule 5, alert hangar, readiness hangar, readiness bldg., landing system facilities and I.F.R. room; Schedule 6, aircraft fueling system, SCOTT AIR FORCE BASE, ILL. U. S. Engineers, 502 Merchandise Mart, Chicago, 54, Ill. Sidney Stilley c/o owner, ch. engineer. Bids 9/7. CD 8/13.

Santucci Constr. Co., 5044 Carol Ave., Skokie, Ill., CA, **$578,546**, storm sewer extensions and modification WHEATON, ILL. City, City Hall, Wheaton, Ill. Bids Sept. 4, awarded Sept. 21. CD 9/24, under LB.

MICHIGAN—State Hy. Dpt., 222 Townsend St., Lansing, Zone 13,

R. W. Meyer Co., Cadillac, Mich., LB. **$96,157**, est. $110,000, grading, drainage, concrete base course, wid'n. U. S. 131 stabil. aggregate on 1.107 mi. U. S. 10, F67-2, C2 (F-133 10) M 67-3 C3, Osceola Co.

Hodgkiss & Douma, Petoskey, Mich., LB. **$186,714**, est. $180,000, bit. aggregate surf. 8 mi. U. S. 23, M71-20 C8, M71-21 09, Presque Isle Co.

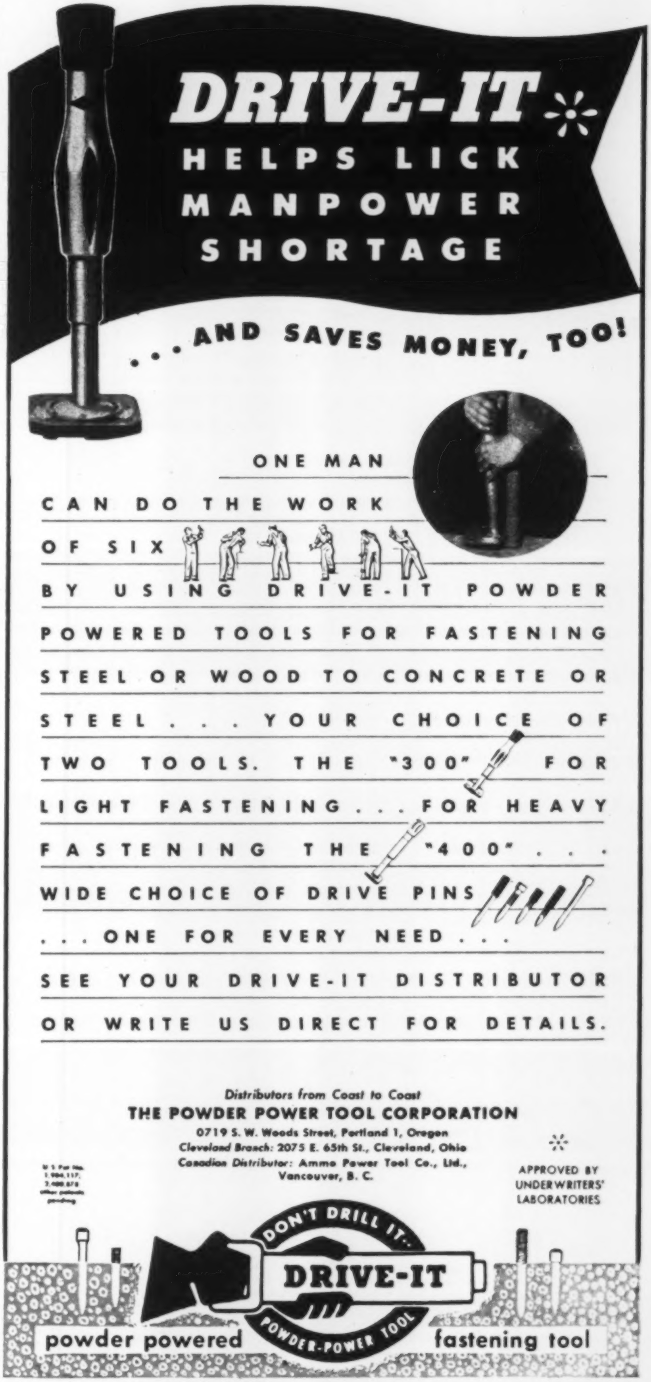
Pierson Contg. Co., 609 Eddy Bldg. Saginaw, Mich. LB. **$273,061**, est. $280,000, c. conc. 2.563 mi. U. S. 131, F 78-5 C5 (F-19 2), F39-1 C6 (F-164 9). St. Joseph and Kalamazoo Counties. Bids Sept. 12. CD 9/7.

Jos. D. Bonness, Inc., 1409 N. 27 St., Milwaukee, 8, Wis. CA, **$518,787**, grading, paving, etc. at General Mitchell Field, MILWAUKEE, WIS. Milwaukee Co., Milwaukee, Wis. Bids Sept. 6, awarded Sept. 18. CD 9/12, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **B. & B. Constr. Co.**, 641 Himrod Ave., Youngstown, O. CA. Approx. **$1,000,000**. SHOPPING CENTER, Robbins Ave. exten., east of city limits, NILES, O. Wm. M. Cafaro & Assoc., c/o contractor.



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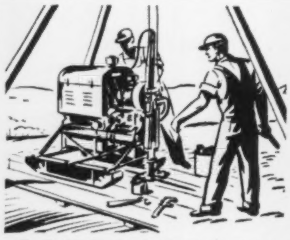

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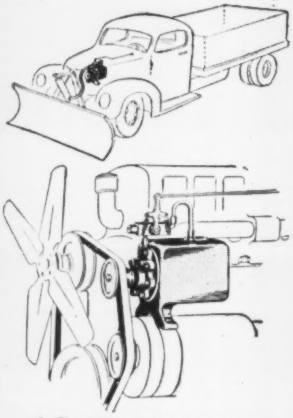

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GRAND RAPIDS 4, MICHIGAN

Peter Becker, 308 W. Elizabeth St., Calumet City, Ill., LB, **$550,000**, 6 story, 3,500,000 cu. ft. HOSPITAL addn., HAMMOND, IND. St. Margaret Hospital, 25 Douglas Ave., Hammond, Ind. Bachman & Bertram, 5116 Hohman Ave., Hammond, Ind., archts. CD

▲ **J. J. Duffy Co.**, 4994 Elston St., Chicago, 30, Ill., LB, **$7,007,254**. DENTISTRY-MEDICAL-PHARMACY bldg., Polk and Wood Sts., in West Side Medical Center locale of University of Illinois Medical School, CHICAGO, ILL. Medical Center Comn. and University of Illinois, Urbana, Ill. Norman Beuter, 37 S. Wabash St., Chicago, Zone 3, engr. Pace Assocs., 53 W. Jackson St., Chicago, Zone 4, Ill., and Ernest Stoufler. Urbana, Ill., archts. CD 11/2/50

▲ **Welso Constr. Co.**, 2345 S. Crawford St., Chicago, 23, Ill.. CA, **$1,200,000**, 135,000 sq. ft. grocery WAREHOUSE CHICAGO, ILL. Hillmans, Inc., 30 W. Washington St., Chicago, 2, Ill. CD 8/28.

Clearing Industrial District, Inc., 38 S. Dearborn St., Chicago, 3, Ill., CA, **$500,000**, WAREHOUSE, at Cicer and 67 Sts., Zone 38, CHICAGO, ILL. Nash Motors Div. of Nash Kelvinator Co., Kenosha, Wis. John S. Cromelin, 6455 S. Central St., Chicago, 38, Ill., archts. Awarded Sept. 5.

Arthur E. Nelson, 1244 E. 79 St., Chicago, Ill., CA **$400,000**, 1 story, 160x360 ft., brick, concrete truck TERMINAL, CHICAGO, ILL. Hinchcliff Motor Service, 3400 S. Pulaski St., Chicago, 23, Ill. Kocher Buss & DeKreek 7109 S. Stony Island, Chicago, 19, Ill., archts. Awarded Sept. 19.

States Improvement Co., 30 N. La Salle St., Chicago, 2, Ill., CA, **$400,000**, 12 story, 34x104 ft. apartment 1300 N. Astor St., CHICAGO, ILL. Benjamin H. Black, 30 N. La Salle St., Chicago 2, Ill. Harold A. Stahl, 111 W. Monroe St., Chicago, 3, Ill., archts. Awarded Sept. 20.

▲ **E. H. Marhoefer Jr., Co.**, 505 N. LaSalle St., Chicago 10, Ill., LB, **$1,928,900**, 5 story, bsmnt., 50x190 ft., steel, brick, concrete HOSPITAL, HINSDALE, ILL. Hinsdale Sanitarium & Hospital, 120 N. Oak St., Hinsdale, Ill. Bids Aug. 28. CD 8/8.

La Salle Constr. Co., 327 S. La Salle St., Chicago, 4, Ill., CA **$500,000**, STORAGE bldg., MAYWOOD, ILL. American Can Co., St. Charles Rd. and 2 St., Maywood, Ill. Awarded Sept. 18.

†**Tunnicliff Constr. Corp.**, 425 Cleveland Bldg., Rock Island, Ill., CA, **$449,619**, constr. BUILDINGS 72 and 59, Eng 11-117-52-1, Rock Island Arsenal, ROCK ISLAND, ILL. U.S. Eng., Clock Tower Bldg., Rock Island, Ill. Bids Sept. 7, awarded Sept. 14. CD 8/9.

Erik Borg Co., 6649 N. Ridge Ave., Chicago, 26, Ill., CA, **$850,000**, HIGH SCHOOL addns., modifications ST. CHARLES, ILL. School Dist. 303, 705 W. Main St., St. Charles, Ill. Bids Sept. 5, awarded Sept. 18. CD 9/18, under LB.

Cosnick Constr. Co., Benton Harbor, Mich. CA **$325,000**. 2 story, brick, steel SCHOOL, BENTON HARBOR, MICH. City, Bard School Dist., Benton Harbor, Mich. Hubert Van Dongen, Benton Harbor, Mich., archt. Bids Aug. 1.

▲ **Cunningham-Limp Co.**, 3087 W. Grand Blvd., Detroit, Mich. CA **$6,000,000**. 1 story, brick, masonry spark plug PLANT, Dort Hy., FLINT, MICH. A C Spark Plug Div. General Motors Corp., 7-217 General Motors Bldg., Detroit, Mich. Bids July 31. CD 7/25.

▲ **Douglas-Cloud Co.**, 1017 Penobscot Bldg., Detroit, Mich., CA. Approx. **$3,500,000**. 1 story Rouge PLANT addn., incl. slag conveyor sys., and dynometer test cells, DEARBORN, MICH. Ford Motor Co., 3000 Schaefer St., Dearborn, Mich., CD 8/10.

W. E. Wood Co., 4649 Humbolt St., Detroit, Mich. CA **$300,000**. 1 story, bsmnt., brick, stone CHURCH, Inkster Rd., INKSTER, MICH. St. Norbert Parish, Inkster Rd., Inkster, Mich. Diehl & Diehl, 120 Madison St., Detroit, Mich., archts.

▲ **Spence Brothers**, 417 McCoskry St., Saginaw, Mich. CA **$1,750,000**. 1 story, brick, masonry, 202,000 sq. ft. PLANT 1 addn., SAGINAW, MICH. Saginaw Steering Gear Div. General Motors Corp., 628 N. Hamilton St., Saginaw, Mich. CD 9/14.

▲ **O. W. Burke Co.**, 1032 Fisher Bldg., Detroit, Mich. CA **$10,000,000**. V-8 engine PLANT, TRENTON, MICH. Chrysler Corp., 341 Massachusetts St., Detroit, Mich. Albert Kahn Associated Architects & Engineers, Inc., 345 New Center Bldg., Detroit, Mich., engr. and archt. CD 1/19.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
STREETS AND ROADS
October 11, Kansas

BIDS ASKED—BUILDINGS

† **N. M., Los Alamos**—HOUSING—B.A. 10/17—U. S. Atomic Energy Comn., Los Alamos, fifty 1 story single and duplex housing units, 2 story four-unit apartments, Inv. No. 291-52-16. $450,000-$650,000. W. C. Kruger Assoc., Professional Bldg., 227 E. Palace St., Santa Fe, archts. CD 8/13.

Tex., Port Arthur—SCHOOLS—B.A. 10/23—Port Arthur Independent School Dist., Port Arthur, Lakeview School, $410,000; Park Pl. School, $500,000. Caudill, Rowlett, Scott, Neff & Assoc., Box 1351, College Station, archts. CD 6/27.

SOON LETS CONTRACT—BUILDINGS

Tex., Dallas—WAREHOUSE—Lone Star Gas Co., Harwood and Jackson Sts., soon lets contract, warehouse, $450,000.. Gill & Harrell & Assoc., 1913 San Jacinto St., archts.-engrs. Zumwalt & Vinther, Mercantile Sec. Bldg., engrs. CD 9/19.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Massman Constr. Co.**, 20 W. 9 St., Kansas City 6, Mo. CA **$576,833**. 27,500 lin. ft. pile dikes, revetment, repairs Missouri River, Cranberry to Brunswick Bends, Inv. 52-15, MISSOURI. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Awarded Sept. 7. CD 9/12 under LB.

† **W. A. Lynn Constr. Co.**, 1022 Trust Bldg., Lincoln, Neb. CA **$545,496**. 21,550 lin. ft. pile dikes, revetments, repairs, Missouri River, Camden to Sheepnose Bends, Inv. 52-13, MISSOURI. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Awarded Sept. 5. CD 9/5 under LB.

▲ **S. Patti Constr. Co., Inc.**, 1340 Admiral St., Kansas City, Mo. LB **$1,429,421**. bulk petroleum storage facilities, Inv. KCM 52-1, PARKVILLE, MO. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. (**Correction**—Contractor). CD 9/25, under LB.

Northern Improvement Co., 633 1st Ave. N., Fargo, N. D., LB. **$140,928**, paving, FARGO, N. D. City, Fargo, N. D., Bids Sept. 4.

† **Rentlor Co., Inc.**, Grand Island, Neb., LB **$262,155**, est. $241,991, construct Franklin South Side Pumping Plant, canal, laterals, sublaterals and drains, Missouri River Basin Proj., Bostwick Div., Spec. DC-3524, NEBRASKA-KANSAS. Bureau Reclamation, Dpt. Interior, Superior, Neb. Bids Sept. 20. CD 8/29.

† **Central Engineering & Constr. Co.**, Jewell Bldg., Kansas City, Mo. LB **$421,690**. pile dykes, revetment, repairs on Missouri River between Rushville and Little Platte Bends, Inv. 52-42, KANSAS. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Sept. 13. CD 9/5.

▲ **Rancho Pipe Line System**, c/o Shell Pipe Line Corp., Shell Bldg., Houston, Tex. Own Forces. Approx. **$27,500,000**. 464 mi. 24 in. welded joint crude oil pipe line from McCamey to vicinity Houston; crude oil pumping stations, **$260,000**, El Dorado; **$285,000**. McCamey; Approx. **$250,000**, Genoa; **$325,000**, LaGrange; Approx. **$650,000**, crude oil storage farm, McCamey, TEXAS. Grand total $29,270,000. CD 9/13, under LB.

Brown & Root, Inc., P.O. Box 3, Houston, Tex., LB. **$458,000**, est. $200,000. permanent type paving 110 blocks, concrete curbs and gutters, incl. drainage, concrete curbs and gutters and paving portion cross streets, Contr. 3, Unit 1 through 64, AUSTIN, TEX. City, City Hall, Austin, Tex., Bids Sept. 21. CD 9/10.

† **Adler Constr. Co.**, Loveland, Colo., CA, **$825,280**, constr. Rattlesnake Dam, Estes Park—Foothills Power Aqueduct, Colorado-Big Thompson Proj., Spec. DC 3503, COLORADO Bureau Reclamation, Dpt. Interior, Loveland, Colo. Bids Sept. 12, awarded Sept. 18. CD 9/19, under LB.

† **Coulter Constr. Co.**, P.O. Box 647, Truth or Consequences, N. M., LB. **$134,460**, est $124,905, structures for instrumentation, radar bldg, Askania bldg. power generator bldg. incl. fuel storage and handling facility drives, parking areas, Inv. 29-005-52-5, LAS CRUCES, N. M. U. S. Eng., P.O. Box 1538, Albuquerque, N. M. Bids Sept. 18. CD 9/10.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Fleisher Engineering & Constr. Co.**, 1206 Builders Exchange, Minneapolis, Minn. CA **$1,642,000**. 184 HOUSING units, Glen-Dale Proj. on Site F, Williams and St. Mary's Aves., SE., incl. streets, grading, utilities, MINNEAPOLIS, MINN. Minneapolis Housing & Redevelopment Auth., A. C. Godward, exec. dir., 1014 Metropolitan Life Bldg., Minneapolis, Minn. Bids Sept. 21. CD 9/5.

▲ **Puckett & Lewis Constr. Co.**, 3411 Pike Ave., North Little Rock, Ark., CA, **$1,300,000**, 150 HOMES, LITTLE ROCK, ARK. North Shore Housing Corp., c/o contractor.

▲ **Dunlay & Williams**, Trinity Industrial Dist., Dallas, Tex., CA. **$825,000**. 160 frame HOUSING units;

E. M. Kern, Killeen, Tex., CA. Approx. **$880,000**. 160 frame HOUSING units;

B. R. Sheffield, Brady, Tex., Approx. **$850,000**; 160 frame HOUSING units;

Jack Cloud, Killeen, Tex., CA. Approx. **$790,000**, 160 frame HOUSING units;

T. J. Cloud, Temple, Tex., CA Approx. **$760,000**, 160 frame HOUSING units. KILLEEN, TEX. Killeen Housing Corp., 1st Natl. Bank Bldg., Killeen Tex. Grand Total $4,105,000. CD 9/25.

▲ **The Lummus Co.**, M. Esperson Bldg., Houston, Tex., CA. Approx. **$10,000,000**. ethlene PLANT, PORT ARTHUR, TEX. Gulf Oil Corp., Port Arthur, Tex. CD 3/22.

Kansas City Structural Steel Co., 21 and Metropolitan Sts., Kansas City, Mo., LB **$344,545**, construct STEAM PLANT (supplying and erecting the structural steel framework for the new north steam plant), COLORADO SPRINGS, COLO. City, City Hall, Colorado Springs, Colo. CD 8/29/50.

† **Utah—Leavell Constr. Co.**, P.O. Box 298, Los Alamos, N. M. LB. **$593,803**. est. $589,618, 70x153 ft. WAREHOUSE, SERVICE STATION, two 15x48x15x18 ft. monolithic concrete STORAGE BLDGS., wood frame, and transite siding, 1 story, clearing, grading, paving, site imprvs. Inv. 291-52-2, LOS ALAMOS, N. M. U. S. Atomic Energy Comn., Los Alamos, N. M. Bids Sept. 18. CD 7/26.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
October 17, 18 California
STREETS AND ROADS
October 17 California

BIDS ASKED—BUILDINGS

Wash., Bethel—SCHOOL—B.A. 10/11—School Dist. 403, Bethel, 60,500 sq. ft., rein.-con., masonry high school, $775,000. Plans deposit $40. Rueger & Rueger, 15 N. Broadway, Tacoma, Wash., archts. CD 6/27.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Long Constr. Co.**, Billings, Mont., LB, **$278,782**, est. $127,640, constr. Lake Lenore Pumping Plants, Nos. 1 and 2 and intake and connecting channels, Columbia Basin Proj., Spec. DC-3537, WASHINGTON. Bureau Reclamation, Dpt. Interior, Ephrata, Wash. Bids Sept. 20. CD 9/5.

▲† **Cherf Brothers Constr. Co., and Sandkay Contractors Inc.**, Ephrata, Wash., LB, **$1,297,351**, est. $1,209,404, Schedule 1, earthwork, pipe lines and structures for Area W-5 laterals, sublaterals wasteways and drains, West Canal laterals and West Canal protective works, Columbia Basin Proj., Spec. DC-3530, WASHINGTON. Bureau Reclamation, Dpt. Interior, Ephrata, Wash. Bids Sept. 20. CD 9/5.

† **Collins Concrete & Steel Pipe Co.**, 3841 N. Colorado Blvd., Portland, Ore., LB, **$304,219**, est. $315,692 Schedule 1, constr. Babcock Pumping plant, adjacent works and access road, Columbia Basin Proj., Spec. DC-3514, WASHINGTON. Bureau Reclamation, Dpt. Interior, Ephrata, Wash. Bids Sept. 19. CD 8/10.

† **Valley Constr. Co.**, 7708 Rainier Ave., Seattle, Wash., LB, **$635,490**, est. $621,500, aircraft refueling system and addns. to bulk fuel system at Fairchild Air Force Base, ENG. 45-164-52-5, SPOKANE, WASH. U. S. Eng., P.O. Box 1217, Spokane, Wash. Bids Sept. 18. CD 8/29.

† **OREGON and CALIFORNIA**—Bureau P. Rds., Dpt. Commerce, Morgan Bldg., Portland, Ore.,

E. C. Hall Co., 12012 S. W. Barbur Blvd., and **Leonard & Slate Co.**, 7805 S. W. 40 St., both Portland, Ore., CA. **$317,909**. 2 mi. relocation Redwood Hy. Bids Sept. 19, awarded Sept. 19.

† **John M. King Co.**, 1601 Taylor Way, Tacoma, Wash., CA **$66,187**, construct Big Eddy switching station, Inv. 6049, Wasco Co., OREGON. Bonneville Power Admin., 827 N. E. Oregon St., Portland, Ore. Bids Sept. 24. CD 9/12.

General Constr. Co., 4850 N. W. Front St., Portland, Ore., CA. **$134,000**. Repair Pier 2, Terminal 4, PORTLAND, ORE. Portland Dock Comn., 3070 N. W. Front St., Portland, Ore. Bids Sept. 24. D. J. McGarity, c/o owner, engr.

Fischbach & Moore Inc., 646 N. Beachwood Dr., Los Angeles, Calif., LB. **$114,664**, hy. lighting illuminated sign and traffic signal system on Santa Ana Freeway between Todd Ave. and Lakewood Blvd., Los Angeles Co., CALIFORNIA. State Div. Hys., 120 S. Spring St., Los Angeles, Calif.

CALIFORNIA—State Div. Hys., P. Wks. Bldg., Sacramento,

Ted Schwartz, Glenbrook Park, Grass Valley, Calif., LB, **$79,879**, removing superstructure and abutments of existing steel truss bridge, constr. new welded steel girder superstructure with timber deck and new timber approach spans on timber bents and conc. abutments across south fork of Trinity River 22.2 mi. west of Hayfork in Trinity Co.

Nomellini Constr. Co., P. O. Box 1177, Stockton, Calif., LB, **$178,089**, rein.-con. slab bridge and grading, c. conc. on untreated rock paving approaches across Paradise Cut Overflow San Joaquin Co. Bids Sept. 19. CD 8/28.

▲† **R. A. Westbrook and Morrison-Knudson Co.**, 411 W. 5 St., Los Angeles, Calif., CA, **$1,692,920**, extending runway 8L-26R, taxiways, roads, etc., Spec. 29057, EL CENTRO, CALIF. Dpt. Navy, San Diego, Calif. Bids Aug. 2, awarded Sept. 20. CD 9/5, under LB.

† **Guy F. Atkinson Co.**, 10 W. Orange St., South San Francisco, Calif., LB, **$576,262** relocating roads and fences at Naval Air Stations, NOY 27958, Spec. 29631, MOFFETT FIELD, CALIF. P. Wks. Office Twelfth Naval Dist., Federal Office Bldg., San Francisco, Calif. Bids. Sept. 19. CD 9/6.

† **Pacific Dredging Co.** 14409 S. Paramount Blvd., Paramount, Calif., LB, Approx. **$888,000**, hydraulic fill, approx. 2,000,000 cu. yd., Spec. 31552, POINT MUGU, CALIF. Navy Air Missile Test Center, Point Mugu, Calif. Bids Sept. 20.

† **Ben C. Gerwick, Inc., and Swinerton & Walberg**, 225 Bush St., San Francisco, Calif., CA, **$913,373**, repairing drydocks 2 and 3, San Francisco Naval Shipyard NOY 27965, Spec. 29637, SAN FRANCISCO, CALIF. P. Wks. Office, Twelfth Naval Dist., Federal Office Bldg., San Francisco, Calif. Bids Sept. 6, awarded Sept. 19. CD 9/18, under LB.

Lowrie Paving Co., Inc., 1755 Evans Ave., San Francisco, Calif., CA, **$881,730**, paving aprons and taxiways and other grading, paving, draining, electric work at San Francisco Airport, Under 132, SAN FRANCISCO, CALIF. Public Utilities Comn., City Hall, San Francisco, Calif. Bids Sept. 4, awarded Sept. 18. CD 9/12, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Garff, Rybert & Garff Constr. Co., 850 W. 15 St., Salt Lake City, Utah, CA. Approx. **$500,000**. 20,000 sq. ft. OFFICE, IRONTON, UTAH. Pacific States Cast Iron Pipe Co., Ironton, Utah. CD 9/11.

Wm. P. O'Neil Co., 4448 S. Loma Vista St., Vernon, Ill., CA, **$400,000**, WAREHOUSE and OFFICE in Central Mfg. District, LOS ANGELES, CALIF. John A. Roebling Sons Co., 640 S. Broad St., Trenton N. J.

▲ **Bechtel Corp.**, 3780 Wilshire Blvd., Los Angeles, Calif., CA, **$80,000,000**. Steam PLANT containing four 150,000 kw. Generating Units on South Shore of San Joaquin River on 230 acre site, about 40 mi. northeast of PITTSBURG, CALIF. Pacific Gas & Electric Co., 445 Sutter St., San Francisco, Calif.

Carl N. Swenson, 1095 Stockton Ave., San Jose, Calif., LB, **$513,200**, 1 story, rein.-con. County OFFICE Bldg. Unit 1 at North 1 and Rosa Sts., SAN JOSE, CALIF. County Clerk, Court House, San Jose, Calif. Bids Sept. 19. CD 8/27.

Buttress & McClellan, 1900 Beverly Blvd., Los Angeles, Calif., CA, **$265,000**, 1 story, panelcrete WAREHOUSE and OFFICE, VERNON, CALIF. Union Carbide & Carbon Corp., 2305 E. 52 St., Vernon, Calif. McClellan, MacDonald & Markwith, 1900 Beverly Blvd., Los Angeles, Calif., archts.

ALASKA

BUILDINGS

LOW BIDS AND CONTRACTS

J. B. Warrack Co., Securities Bldg., Seattle 1, Wash. CA. Approx. **$520,000**. 1 and 2 story, part bsmnt., frame HOTEL, ANCHORAGE, ALASKA. Westward Hotel Corp., Anchorage, Alaska. CD 9/24.

† **J. B. Warrack Co.**, Securities Bldg., Seattle 1, Wash. CA. **$476,600**. est. $440,635, army THEATER with stage, 1,000 persons capacity, Inv. No. S95-507-62-15, FORT RICHARDSON, ALASKA. U. S. Eng. (APO 942, c/o PM, Seattle, Wash.) Anchorage, Alaska. Bids Sept. 21. CD 8/28.

U. S. POSSESSIONS

BIDS ASKED—HEAVY CONSTRUCTION

Puerto Rico—TRANSIT SHEDS, etc.—B.A. 10/22—Puerto Rico Transportation Auth., at office Salvador V. Caro, gen. mgr., Bldg. 53, Isla Grande Airport, San Juan, Construct transit sheds and shipping facilities, misc. bldgs., filling, grading, concrete and bit paving, railroad tracks, electric lighting, piping, storm drains and other facilities. Plans deposit $100. Frederick Snare Corp., 233 Broadway, New York 7, N. Y. contracting engrs., adv. ENR 10/4.

CANADA

BIDS ASKED—HEAVY CONSTRUCION

Man., Winnipeg—TRANSFORMERS—B.A. 10/10—Chairman Public Utilities Com., City Hall, six 150 kva distr. transformers. W. D. Hurst, City Hall, city engr.

BIDS ASKED—BUILDINGS

Ont., London—HOUSING—B.A. 10/9—R. P. Opie, c/o Central Mortgage & Housing Corp., 441 Queen's Quay W., Toronto, 2B, Ont., 125 housing units, DND No. 1/51 Approx. $750,000. Plans deposit $10. S. M. Connolly, engr.

Ont., London—BARRACK BLOCK—B.A. 10/16—R. P. Opie, c/o Defence Constr. Ltd., 441 Queens Quay W., Toronto, 2 B, Ont., Barrack Block 1, Job. No. 1547, Approx. $700,000. Plans deposit $50. S. M. Connolly, c/o owner, engr.

Que., Montreal—SCHOOLS—B.A. 10/16—M. Jarry, 117 W. Ste. Catherine St., 3 story, 64x210 ft., rein.-con. school for Parish of St. Albert le Grand on Jeanne Mance St., $400,000. A. Martineau, 322 E. Craig St., Montreal, Que., archt.; 3 story, 53x165 ft., rein.-con. school for Parish of Barthelemy on St. Roch St., $400,000. A. Gragel, 513 E. Rachel St., archt. CD 1/27/50.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **A. M. Tallman**, 205 Stadacona St., Winnipeg, Man., CA, **$1,500,000**, hard surface runway with parallel taxi strip and rehabilitation runway and parking areas, PORTAGE LA PRAIRIE, MAN. Dpt. Transport, Hunter Bldg., Ottawa, Ont. Bids Aug. 30, awarded Sept 21. CD 8/23.

▲ **Foundation Co. of Canada Ltd.**, 1900 Sherbrooke St. W., Montreal, Que., Approx. **$2,157,878**, hangar, garage, power plant, cafeteria and site development QUEBEC CITY, QUE. Defence Constr. Ltd., 1247 Guy St., Montreal, Que. N. R. McAndrew, c/o owner, engr.

BUILDINGS

LOW BIDS AND CONTRACTS

Annapolis Valley Constr. Co., 10-A Elm St. Truro, N. S., CA, Approx. **$300,000**, DND married QUARTERS, two units Proj. 1/51 HAMMOND PLAINS, N. S. Central Mortgage & Housing Corp., 1032 Gottingnen St., Halifax, N. S. P. J. Mangan, c/o owner, engr

▲ **Armco Drainage & Metal Products of Canana, Ltd.**, Guelph, Ont., CA. Approx. **$1,199,139**, PLANT mfg. and supply of pre-fabricated huts, GUELPH, ONT. Defence Constr. Ltd., 441 Queens Quay, W., Toronto 2B, Ont. S. M. Connally, c/o owner, engr.

A. J. Lennox Contractors Ltd., 220 Laird Dr., Leaside, Ont., CA, **$600,000** FACTORY, LEASIDE, ONT. Canada Wire & Cable Co. Ltd., 147 Laird r., Leaside, Ont. C 12/11/50.

J. O. Lambert, 6 Garagonthier St., Quebec City, Que., LB Approx. **$452,000**, PRESBYTERY and PARISH HALL, la Canadiere St., QUEBEC CITY, QUE. Parish of St. Pascal de Maizerets, Rev. J. A. Marcoux, cure, Quebec City, Que. Bids Aug. 30. CD 8/28.

Dube & Dube, 14 Place d'Aiguillin, Quebec City, Que., CA, **$550,000**, HOSPITAL addn., QUEBEC CITY, QUE. Reverend Sisters of the Good Shepherd, 680 Ste. Foye Rd., Quebec City, Que. R. Cote, 19 Bon Air Ave., Quebec City, Que., archts.

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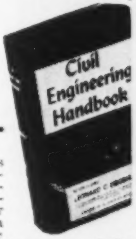

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This offer applies to U. S. only.

announcing the
SPECIAL
FALL SURVEY
OF
CONSTRUCTION
COSTS

to be published in the
November 1st, 1951
issue of

**ENGINEERING
NEWS-RECORD**

In order to keep its readers abreast of the changes brought about in construction economics by control legislation and by the swing into mobilization, the editors of Engineering News-Record will present an analysis of what has happened since the publication of the Costs and Trends Yearbook (March 29th).

A 22" x 32" COLORED WALL CHART DEPICTING TRENDS IN CONSTRUCTION COSTS WILL BE INCLUDED WITH THIS NOV. 1st ISSUE.

Single copies, including chart, $2.00

Wall Chart of Construction Cost Trends, $1.00 when purchased separately.

CONSTRUCTION REPORTS

Third Section

NEW ENGLAND

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **John Capobianco,** 44 School St., Boston, Mass. LB **$1,676,000.** est. $1,800,000. Chandler Street Junior High SCHOOL, WORCESTER, MASS. City, School Dpt., City Hall, Worcester, Mass. Bids Sept. 25. CD 9/18.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION

LOW BIDDERS AND CONTRACTS—

▲ **NEW JERSEY and PENNSYLVANIA**—Delaware River Toll Bridge Comn., 526 Broad St., Bank Bldg., Trenton, 8, N. J.

Johnson, Drake & Piper Inc., 86 Trinity Pl., New York, N. Y., CA, **$3,141,335,** constr. substructure for 3 bridges over Delaware River, bridges to link Delaware Water Gap, Pa., with Dunnfield, N. J.; Portland, Pa. and Columbia, N. J. and Milford, Pa. with Montague, N. J. Bids Sept. 14, awarded Sept. 25. CD 9/19, under LB.

SOUTH

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Greenwood Mills,** c/o James C. Self, Sr., Greenwood, S. C., Owner Builds. Approx. **$3,000,000.** print cloth MILL, GREENWOOD, S. C. CD 9/28.

▲ **Merritt-Chapman & Scott Corp.,** 17 Battery Pl., New York, 4, N. Y., CA, Approx. **$21,200,000,** paper MILL, VALDOSTA, GA. National Container Corp., Borden and Review Sts., Long Island City, N. Y. CD 5/15.

▲ **Ford, Bacon & Davis, Inc.,** engr., 39 Broadway, New York, N. Y. CA **$2,000,000.** design and construct furnace black PLANT to produce cold synthetic rubber, 15 mi. west of FRANKLIN, LA. United Carbon, Inc., United Carbon Bldg., Charleston 27, W. Va.

MIDDLE WEST

BIDS ASKED—BUILDINGS

▲ **Ill., Chicago**—APARTMENT UNITS—Bids Asked—Community Development Trust, 39 S. State St., Chicago, Zone 3, sixteen 352 unit apartment bldgs. $4,000,000. Holsman, Holsman, Klekamp & Taylor, 39 S. State St., Chicago, Zone 3, archts. CD 5/29.

HEAVY CONSTRUCTION

LOW BIDDERS AND CONTRACTS—

▲ **Michigan Gas Utilities Co.,** Sturgis, Mich. Owner Builds. **$1,500,000,** gas pipe line from Panhandle Eastern Pipe Line Co. at Marshall, constr. 60 mi. Marshall to Coldwater, Sturgis to Hillsdale, MICHIGAN. CD 3/9/51.

WEST OF MISSISSIPPI

BIDS ASKED—BUILDINGS

▲† **Tex., Texarkana**—FACILITIES—B.A. 10/16—U. S. Eng., Box 61, Tulsa 2, Okla., addnl. facilities, Area 1, Lone Star Ordnance, Inv. No. Eng 34-066-52-9. Approx. $1,000,000. Extended date. CD 9/25.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Foster Wheeler Co.,** 165 Broadway, New York, N. Y. CA **$7,000,000.** catalytic cracking and alkylation units REFINERY, NEODESHA, KAN. Standard Oil Co. of Indiana, 910 S. Michigan St., Chciago 5, Ill. Awarded June 20. CD 2/23.

▲ **McDonald Engineering Co.,** 188 W. Randolph St., Chicago, Ill., CA. Approx. **$3,000,000.** 2,000,000 bu. GRAIN ELEVATOR, CORPUS CHRISTI, TEX. Port of Christi, c/o Wharfg Headquarters, Corpus Chrsiti, Tex. CD 9/7.

FAR WEST

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Swinerton & Walberg Co.,** 225 Bush St., San Francisco, Calif., CA, **$3,000,000,** paper converting PLANT, SAN LEANDRO, CALIF. Crown Zellerbach Corp., 343 Sansome St., San Francisco, Calif. CD 6/18.

ALASKA

BIDS ASKED—BUILDINGS

▲† **Alaska, Bethel**—HOSPITAL—B.A. 10/23—Bureau Indian Affairs, Dpt. Interior, Interior Bldg., 19 and C Sts., Wash. 25, D. C., 240x275 ft., frame, steel hospital, 83x126 ft. service bldg., 2 story, 150x178 ft. quarters bldg., 58x162 ft. storage bldg. for Alaska Native Service ANS Proj. 501-245. $3,500,000. Extended date. Foss, Malcolm & Olsen, Juneau, archts. CD 9/11.

OFFICIAL PROPOSALS

Bids: October 16, 1951

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

SIR ADAM BECK-NIAGARA GENERATING STATION NO. 2 TENDERS FOR CONSTRUCTION OF HYDRAULIC TUNNEL

Sealed tenders, in duplicate, addressed to the undersigned and clearly marked "Tender for Hydraulic Tunnel, Section No. 5 ...., Sir Adam Beck-Niagara Generating Station No. 2" will be received up to 4 p.m., Eastern Standard Time.

Tuesday, October 16th, 1951

for the construction of the Section of Hydraulic Tunnel, approximately 3,680 feet in length, or circular cross-section, concrete-lined, with 45 feet finished diameter. The principal features of the work to be performed in the Section comprise:—one offset work shaft, with cross-cut drift to the tunnel, excavation of tunnel, installation of structural steel support, construction of concrete lining reinforced where required, grouting of rock and behind concrete lining wherever necessary, and dewatering of the work.

Copies of Form of Agreement, Information for and Instructions to Tenderers, General Conditions and Specification, Plans, Form of Tender and Labour Agreement may be obtained on or after September 19th, 1951 from the Director of Supply, 620 University Avenue, Toronto, Ontario, upon payment of a deposit in the amount of $1,000.00 per set, which amount will be refunded upon submission of a tender accompanied by the required security. If no such tender is submitted but the documents are returned in good order $750.00 of the said deposit will be returned. Failing return of the documents in good order the Commission will retain the full amount of the deposit.

Each tender for Section No. 5 of the Hydraulic Tunnel must be accompanied by a certified cheque on a Canadian Chartered Bank for the sum of Three Hundred Thousand Dollars ($300,000.00) payable to the order of the Commission. The Tenderer to whom a contract is awarded shall be required to provide a performance bond satisfactory to the Commission for fifty per cent (50%) of its tender price. Each certified cheque, furnished by each Tenderer, will be retained by the Commission until the contract for the Section has been executed and the required performance bond has been furnished. As soon as possible thereafter, the certified cheques of the unsuccessful tenderers will be returned. If a Tenderer after being awarded a contract for the Section, refuses to execute the contract or fails to furnish the required performance bond, One Hundred and Fifty Thousand Dollars ($150,000.00) of the proceeds of the certified cheque of such Tenderer shall be forfeited to the Commission as ascertained and liquidated damages and the balance returned. If the successful tenderer fulfills the obligations as to executing a contract and furnishing a performance bond, its certified cheque will be returned.

The lowest or any tender will not necessarily be accepted.

Robert H. Saunders, C.B.E., K.C.,
Chairman, and Members of The Hydro-Electric Power Commission of Ontario,
620 University Avenue,
TORONTO 2, Ontario

for
DIRECT CONTACT
with the
MOST ACTIVE BUYERS
throughout the field of
ENGINEERING
CONSTRUCTION—
Use the
Searchlight Section
ENGINEERING NEWS-RECORD

OFFICIAL PROPOSALS

RATE: THE RATE FOR OFFICIAL PROPOSAL ADVERTISING IS $1.25 PER LINE (OR FRACTION) PER INSERTION.

CLOSING DATE: FRIDAY 10:30 A. M. FOR THE ISSUE DATED THE FOLLOWING THURSDAY.

SEND COPY TO: OFFICIAL PROPOSAL DIVISION, ENGINEERING NEWS-RECORD, 330 W. 42ND ST., NEW YORK 18, N. Y.

U. S. Government

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3551) will be received by Bureau of Reclamation, Tracy, California, until October 25, 1951, and then publicly opened for furnishing labor and materials and performing all work for the construction of Columbia Pumping Plant No. 1, Mowry Pumping Plant, and delivery systems, Central Valley Project, California. The work is situated approximately 3 miles northeast of Mendota, California. Principal items in 2 schedules are approximately: 78,000 cu. yds. excavation; 1,530 cu. yds., concrete; installing 42,000 lbs. pumping units; furnishing and installing 50,000 lbs. metalwork; and other work. Time allowed for completion will be 400 days. For particulars, address Bureau of Reclamation, Tracy, California; or Building 53, Denver Federal Center, Denver, Colorado.

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3558) will be received by Bureau of Reclamation, Rock Springs, Wyoming, until October 23, 1951, and then publicly opened for furnishing labor and materials and performing all work for the construction of Means Canal and Big Sandy channel change, Eden Project, Wyoming. The work is situated about 10 miles north of Farson, Wyoming. Principal items are approximately: 620,000 cu. yds., excavation; 31,000 cu. yds., earth canal lining; 700 cu. yds., concrete; 46 M.b.m., lumber in bridges; 2 radial gates and hoists; and other work. Time allowed for completion will be 360 days. For particulars, address Bureau of Reclamation, Rock Springs, Wyoming; or Building 53, Denver Federal Center, Denver, Colorado.

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3554) will be received by Bureau of Reclamation, Arapahoe, Nebraska, until October 18, 1951, and then publicly opened for furnishing labor and materials and performing all work for the construction of earthwork and structures, Cambridge Canal, Station 1012+52 to Station 1549+51 and drains and channel changes, Missouri River Basin Project. The work is situated near Edison, Nebraska. Principal items are approximately: 670,000 cu. yds., excavation; 3,300 cu. yds., concrete in structures; furnishing and laying 5,000 lin. ft. of reinforced-precast-concrete pipe, varying from 18 inches to 72 inches in diameter; and other work. The work is divided into 4 schedules. Time allowed for completion will be 360 days. For particulars, address Bureau of Reclamation, Arapahoe, Nebraska; or Building 53, Denver Federal Center, Denver, Colorado.

Additional

OFFICIAL PROPOSAL

Advertisements

on pages 86 and 88

Bids: October 23, 1951

Clearing and Grubbing Neversink Reservoir

CONTRACT 387

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 11:00 A.M., Eastern Standard Time, on Tuesday, October 23, 1951, for Contract 387, for clearing and grubbing the Neversink reservoir in preparation for the storage of water. The work will comprise the clearing of approximately 1,150 acres, the grubbing of about 475 acres, and required excavation, seeding and removal of excrementitious material, all as set forth in the specifications. The Neversink reservoir is located in the Town of Neversink, Sullivan county, New York.

No bid will be received and deposited unless accompanied by a certified check upon a National or State bank, drawn and made payable to the order of the Comptroller of the City of New York, in the amount of thirty-five thousand dollars ($35,000.00), for the proper execution of the contract.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., can be obtained at the office of the Chief Engineer, Room 1311, at the above address, upon application in person or by mail, by depositing the sum of five dollars ($5.00) in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of four dollars ($4.00) will be made for each other pamphlet returned in acceptable condition. Arrangements will be made whereby prospective bidders desiring blueprints of the contract drawings for their own use may secure same, the cost thereof to be paid by them. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, RUFUS E. McGAHEN, EDWARD C. MAGUIRE, Commissioners, Board of Water Supply; RICHARD H. BURKE, Secretary.

Bids: October 18, 1951

Construction of Sanitary Sewers

Sealed proposals for furnishing all labor and materials for the construction of approximately 44,210 lineal feet of 8", 10", 12" and 15" sanitary sewers, manholes and miscellaneous appurtenances together with approximately 9,620 lineal feet of 10" cast iron force main and two sewage pumping stations to be constructed in the township of Abington, Montgomery County, Pennsylvania, will be received by the Secretary of the Commissioners of the Township of Abington, at the Township Office, 1176 Old York Road, Abington, Pennsylvania, up to 7:30 o'clock p.m., Eastern Standard Time, and will be publicly opened at 8:00 o'clock p.m., Eastern Standard Time on Thursday, October 18, 1951.

The work will be divided into six contracts designated as:

CONTRACT NO. 25: Branch and intercepting sewers in the Glenside Area, Abington Township, Wards No. 3, 11 and 12, consisting of approximately 8,450 lineal feet of 8", 10" and 15" sanitary sewers.

CONTRACT NO. 26: Branch sewers in the North Hills and Ardsley Areas, Abington Township, Wards No. 6 and 9, consisting of approximately 11,470 lineal feet of 8" sanitary sewers.

CONTRACT NO. 27: Branch and intercepting sewers, together with cast iron force main in the Willow Grove Area, Abington Township, Wards No. 5, 8 and 10, consisting of approximately 21,150 lineal feet of 8", 10" and 12" sanitary sewer and approximately 2,670 lineal feet of 10" cast iron force main.

CONTRACT NO. 28: Sewage pumping station located on Davisville Road, Northeasterly from Moreland Avenue in Upper Moreland Township.

CONTRACT NO. 29: Intercepting sewer and cast iron force main in the Abington and Rydal Areas, Abington Township, Ward No. 1, consisting of approximately 3,140 lineal feet of 10" and 15" sanitary sewers and approximately 6,950 lineal feet of 10" cast iron force main.

CONTRACT NO. 30: Sewage Pumping Station located in Abington Township Bird Sanctuary, Washington Lane and Valley Road, Abington Township, Ward No. 2.

Information for Bidders, Form of Bid, specifications and Form of Contract may be examined at the Township Office or at the office of Albright & Friel Inc., Consulting Engineers, 121 South Broad Street, Philadelphia 7, Pa., and copies thereof may be obtained at either office, upon a deposit of FIFTEEN DOLLARS ($15.00) for each set of documents for each contract. If the documents are returned in good condition within five days after the opening of bids, the full amount of the deposit for one set of each contract will be returned to each actual bidder and other deposits will be refunded with a deduction of SEVEN DOLLARS AND FIFTY CENTS ($7.50) for each set of each contract returned to defray the actual cost of reproduction. If the documents are not returned within the time stated, the entire amount of deposit will be forfeited.

A Certified Check or Bid Bond drawn to the order of the Township of Abington, equal to five per cent (5%) of the amount of bid must be submitted with the proposals.

Contractors may submit bids on any or all contracts.

The proposal must be sealed and marked "SEALED PROPOSALS FOR CONSTRUCTION OF SANITARY SEWERS—CONTRACT NO. 25 and/or 26 and/or 27 and/or 28 and/or 29 and/or 30" addressed to the Commissioners of the Township of Abington, c/o Mr. E. Raymond Ambler, Secretary.

The Board reserves the right to reject any and/or all bids.

No bid may be withdrawn within thirty (30) days after the actual date of the opening thereof.

E. RAYMOND AMBLER,
Secretary.

September 27, 1951.

Bids: October 15, 1951

Pressure Regulating Valves

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
CONTRACT NYA-130.003

Sealed proposals for furnishing and installing pressure regulating valves at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 8th Ave., New York 11, until 11:15 A.M. Monday, October 15, 1951, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Chief Engineer and copies will be furnished upon deposit of $10 per set. The deposit will be remitted if the documents are returned in good condition, not later than 30 days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman.
New York, October 4, 1951.

Contractors Watch This Section —

for new projects. Publish your announcements through the proposal sections of *Engineering News-Record* and get their bids.

OFFICIAL PROPOSALS

(Continued from page 87)

Bids: October 22, 1951

Transit Sheds & Shipping Facilities

PUERTO RICO TRANSPORTATION AUTHORITY

The Puerto Rico Transportation Authority will receive sealed bids for the construction of Transit Sheds and Shipping Facilities, until 2:00 P.M. (Puerto Rico Time) on the 22nd day of October, 1951, at the office of its General Manager at Building 53, Isla Grande Airport, San Juan, Puerto Rico, at which time and place all bids will be publicly opened and read aloud.

The construction will consist principally of transit sheds, miscellaneous buildings, filling, grading, concrete and bituminous paving, railroad tracks, electric lighting, piping, storm drains and other facilities.

The successful bidder will be required to furnish satisfactory performance and payment bond or bonds.

Proposed forms of contract documents, including plans and specifications, are on file at the office of the Chief Engineer of the Puerto Rico Transportation Authority, at Building 53, Isla Grande Airport, San Juan, Puerto Rico.

Copies of the documents may be obtained until 60 hours prior to assigned time for opening bids by depositing $100.00 with the Puerto Rico Transportation Authority for each set of documents so obtained. The amount of the deposit will be refunded to each person who returns the plans and documents in good conditions within 10 days after the opening of bids.

However ninety dollars ($90.00) only will be refunded to bona-fide bidders for extra sets returned and those taking sets and not filing formal proposals.

A set of drawings and specifications will be available for inspection only at the Office of Frederick Snare Corporation, Contracting Engineers, 233 Broadway, New York 7, New York.

The Puerto Rico Transportation Authority reserves the right to reject any or all bids and waive any informalities in bidding.

A certified check or bank draft payable to the Puerto Rico Transportation Authority, U. S. Government Bonds, or a satisfactory bid bond executed by the bidder and acceptable sureties in an amount equal to (5%) five per cent of the bid shall be submitted with each bid.

San Juan, Puerto Rico
September 14, 1951

SALVADOR V. CARO
General Manager

Bids: October 9, 1951

Conical Plug Valves, Etc.

CONTRACT 412

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 11:00 A.M., Eastern Standard Time, on Tuesday, October 9, 1951, for Contract 412, for furnishing, testing and delivering eight 48-inch and two 36-inch cast steel motor-operated conical plug valves, two 42-inch, two 24-inch and one 12-inch cast iron motor-operated conical plug valves, one 14-inch cast iron manually-operated conical plug valve, one 20-inch cast iron motor-operated gate valve; pipe couplings and miscellaneous valves for installation in the intake and outlet chambers of the Neversink tunnel, the Downsville release water chamber and the outlet chamber of the East Delaware tunnel of the Delaware Aqueduct, all as set forth in the specifications.

No bid will be received and deposited unless accompanied by a certified check upon a National or State bank, drawn and made payable to the order of the Comptroller of the City of New York, in the amount of thirty-five thousand dollars ($35,000.00), for the proper execution of the contract.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, forms of bid and contract, specifications, requirements as to surety, etc., can be obtained in Room 1311, at the above address, upon application in person or by mail, by depositing the sum of five dollars ($5.00) in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of four dollars ($4.00) will be made for each other pamphlet returned in acceptable condition. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, RUFUS E. McGAHEN, EDWARD C. MAGUIRE, Commissioners, Board of Water Supply; RICHARD S. BURKE, Secretary.

READ THE OFFICIAL
PROPOSAL COLUMNS OF
ENGINEERING NEWS-RECORD
THIS WEEK AND EVERY WEEK

U. S. Government

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS, Foot of Prytania St., New Orleans 9, La.—Sealed bids will be received in this office until 11:00 a.m., CST, October 16, 1951, and then publicly opened for construction of Bayou Boef Lock, St. Mary Parish, La., New Orleans District. The principal features involved are approximately 300,000 cubic yards of earthwork, 12,000 cubic yards of concrete, 1,147,000 pounds of steel reinforcement, 22,140 square feet of steel sheet piling, 3,700 linear feet of timber guide walls, 2 sets of structural steel sector gates, electrical work and operating machinery. Further information on application.

EMPLOYMENT

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

ASSISTANT HYDRAULIC Engineer with some field experience in construction of hydroelectric power plant projects etc. for large Copper Company, Chile, South America. Civil Engineering graduate preferred. 3-year contract. Transportation both ways and salary while traveling paid by Company. In reply give complete details. P-1994, Engineering News-Record.

BRIDGE AND Highway Engineers; Designers, Draftsmen and Traffic engineers needed. Interesting projects, permanent positions, good pay, no regimentation. Give full details first letter. Frank D. McEnteer, Consulting Engineer, 504 Baltimore Ave., Clarksburg, W. Va.

CHEMIST OR Chemical Engineer for research laboratory. We need graduate chemist or Chemical engineer with at least 5 years practical experience with bituminous paving materials. We will be particularly interested in a man with State Highway testing laboratory experience. Position open offers opportunity to grow with an expanding International Organization. Salary open. Location of work in large Eastern City, excellent working conditions. Send complete resume including age, schooling, experience, salary desired, etc. Write P-2044, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT experienced in concrete paving, grading, and drainage work. Permanent basis with well established contracting firm. Work centered in deep South. P-1884, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT. Permanent position. Must be top grade building construction management man with extensive industrial and monumental project experience. Nationally prominent construction company established over 50 years offers good opportunity to right man. Our Personnel know of this ad. A complete experience record is desired. Address Box P-2079, Engineering News-Record.

HEATING AND Refrigeration Engineer wanted. Must be capable of handling mechanical layout, design, and supervision of such installation. Locations of offices served are Racine, Wisconsin; Waukegan, Illinois; Lake Forest, Illinois; and Evanston, Illinois. Pay commensurate with ability. The firm is one of the largest plumbing, heating and refrigeration companies between Chicago and Milwaukee, and is expanding its services yearly. Stiles & Horne, Inc., 648 North Western Ave., Lake Forest, Illinois.

ENGINEERS WITH Experience in preparation of plans for sewage and water treatment projects or related experience. Location Northwestern Ohio. P-2070, Engineering News-Record.

FIELD ENGINEER. Permanent position. Desired for nationally prominent construction company. Man desired must have had heavy experience on layout work for foundations and building interiors. When replying, forward complete experience record. Address Box P-2080, Engineering News-Record.

STRUCTURAL ENGINEER: Experienced in steel design industrial and commercial buildings by a leading Middle-West structural steel fabricating company. Excellent opportunity for qualified man. Permanent. P-1939, Engineering News-Record.

CONTRACTOR'S ENGINEER, Wanted. Experienced in quantity surveying on all types of General Building Construction for General Contractor's Office located in Central Pennsylvania. Civil Engineering graduate preferred but not essential. Advise education, experience and salary expected. P-2003, Engineering-News-Record.

DETAILER AND Checker—Experienced in making and checking shop details for steel fabrication plant. All types of steel construction. State experience, references, and rate expected. Savannah Machine and Foundry Company, P. O. Box 590, Savannah, Georgia.

ENGINEERING COMPUTOR and Draftsman—Good experience record required. Thorough experience with electric computing machine and use of plane system of coordinates. Work involved is subdivision of large tracts of land into small lots. Familiarity with curvilinear road layouts and curve intersections required. Work is located at Morrisville, Pennsylvania. Phone Manhassett 7-0777. C. A. Monroe, 1900 Northern Boulevard, Manhasset, N. Y.

ENGINEER ESTIMATOR—Wanted for home office of general construction company. Must be completely familiar with estimating, bidding and cost analysis on both heavy construction and building contracts. Only applicants with proven, broad experience will be considered Salary open. Send complete resume. P-2095, Engineering News-Record.

WANTED IMMEDIATELY: Superintendent or assistant superintendent thoroughly experienced to supervise large draglines, dozers, drilling equipment and dynamiting on large canal and levee project. Must have the push for guaranteed yardage output monthly. Permanent position if qualified. Write to Box Number P-2061, Engineering News-Record.

EMPLOYMENT SERVICE

SALARIED PERSONNEL, $3,000-$25,000. This confidential service established 1920, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L, 241 Orange St., New Haven.

POSITIONS WANTED

CIVIL ENGINEER, 32, B.S. and M.S. degrees (Civil Eng. and Soil Mechanics), experienced in design, construction: earth dam, airfield, highway, reinforced concrete structures, foundations. Some research. Available Nov. PW-2033, Engineering News-Record.

CIVIL ENGINEER, 32, married, graduate 1941. N. J. Lic. P.E. & L.S. Job engineer on industrial, chemical, and power house construction. Available October 15th. Prefer east. PW-2084, Engineering News-Record.

CIVIL ENGINEER, grad., 40 years general practice, investigation, design, construction. PW-2104, Engineering News-Record.

CONSTRUCTION ENGINEER-45-20 yrs. experience survey layout construction of sewer and water systems desires position inspector or chief of party. PW-2024, Engineering News-Record.

(Continued on page 89)

SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:

(Not available for equipment advertising)

$1.50 cents a line, minimum 3 lines. To figure advance payment count 5 average words as a line.

POSITION WANTED & INDIVIDUAL SELLING OPPORTUNITY undisplayed advertising rate is one-half of above rate, payable in advance.

PROPOSALS, $1.25 a line an insertion.

INFORMATION.

BOX NUMBERS count as 1 line additional in undisplayed ads.

DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.

DISPLAYED—RATE PER INCH:

The advertising rate is $14.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured 7/8 inch vertically on one column, 3 columns—30 inches—to a page.

E.N.R.

NEW ADVERTISEMENTS received by October 5th at the New York City Office, 330 W. 42 St., N. Y. 18, will appear in Oct. 18th issue subject to space available

---

WANTED

TECHNICAL PERSONNEL

Applications are invited from men with proven records in positions of responsibility for the following openings:

For subaqueous tunnels, bridges and airport projects.

Chief Draftsman
Senior Structural Engineer
Specification Writer
Senior Construction Engineer

For work on ships and other special floating equipment.

Senior Naval Architects
Intermediate Naval Architects
Senior Marine Engineers
Piping Draftsmen
Structural Draftsmen
Hull Draftsmen

Liberal salaries commensurate with experience, vacations with pay and other supplementary benefits.

Applicants are requested to state qualifications, references, availability and salary requirements in first letter.

PALMER and BAKER, Inc.
Consulting Engineers—Architects
P. O. Box 346 Mobile, Alabama
Phone 2-0511

Fire Protection ENGINEERING

An expanding field with a top-flight organization.

RECENT GRADUATES

Wanted to train as fieldmen. Send personal resume to:

P-1783, Engineering News-Record
330 W. 42nd Street, New York 18, N. Y.

STRUCTURAL ENGINEER

With 10 to 15 Years Experience in Reinforced Concrete and Structural Steel Design for Electric Utility Work. Write to

STRUCTURAL ENGINEER
PENNSYLVANIA POWER & LIGHT CO.
Allentown, Pa.

PLANT MAINTENANCE ENGINEERS

Experienced in plant maintenance. Technical graduate preferred. Experience in chemical plants beneficial. Regular full-time positions in central and eastern U. S. locations. First letter must give full details of experience, age, salary expected, and when available for work. Write **Box ENR, 1515, 221 W. 41 St., N. Y. 18.**

STRUCTURAL ENGINEERING

ARCHITECTURAL ENGINEERING

Courses of instruction by mail. Forty-first year
Information sent without obligation. Write today.

WILSON *Engineering Corp.*

College House Offices - HARVARD SQUARE, CAMBRIDGE, MASS.

Available about October 15

Registered structural engineer, extensive experience on heavy industrial construction, to represent out-of-town firm of architects or engineers in the Chicago area; travel Illinois and neighboring states. Design, spex, plans, field supervision, administration, etc. Can furnish small staff of competent men.

M. F. WILSON
600 Washington Blvd. Chicago, 6

POSITIONS WANTED

(Continued from opposite page)

CONSTRUCTION MAN with engineering experience wishes to locate in West. Age 38. Experienced as Superintendent, Job Engineer and Party Chiefs on Buildings, Roads, Sewers and Grading Projects. Union Carpenter's card. Reply PW-2094, Engineering News-Record.

CONSTR. SUPT. All types heavy Construction. 10 years foreign. Foreign assignment preferred. PW-2028, Engineering News-Record.

ELECTRICAL OR Plant Engineer-Wide heavy industrial administrative experience as chief of design, construction, operation, maintenance and plant engineering-Reg. Engr.-Top calibre-Will relocate. PW-1981, Engineering News-Record.

ENGINEER, REGISTERED, Grad. Age 48, 25 years experience structural design and construction on sewage treatment, water filtration plant and power plant work. Also cost estimating and piping and equipment experience. Wishes to locate in Detroit area. PW-2040, Engineering News-Record.

ESTIMATOR GRADUATE Architectural Engineer age 27, two years experience, takeoff, pricing, expediting, commercial and school work, also large housing projects. Now employed. Desires position combining office and field work. PW-1980, Engineering News-Record.

LICENSED SURVEYOR. Twenty years experience preliminary and location-Highways-Railroads-Track design. PW-2006, Engineering News-Record.

MECHANICAL INSTALLATION Specialist and General Construction superintendent widely experienced on Hydro-Electric, Chemical, Mining and General industrial plants. U. S. citizen now employed in Canada seeking employment in U.S.A. PW-2076, Engineering News-Record.

PROFESSOR, CIVIL Engineer, 43, doctor's degree, 13 years University teaching experience, invites correspondence to negotiate a permanent position with a University. PW-2101, Engineering News-Record.

SELLING OPPORTUNITY WANTED

REINFORCED STEEL and Concrete superintendent familiar with construction operations and equipment, also metal lath and ornamental plastering leaving for Capetown, South Africa, January 1, for 3 months, desires represent American interests. RA-2027, Engineering News-Record.

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Large engineering firm wishes to acquire several complete plants through purchase of (1) capital stock, (2) assets, (3) machinery and equipment, whole or in part. Personnel retained where possible, strictest confidence.

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Our craftsmen have a completely equipped department fully able to accommodate the repair of all makes of transits, levels and measuring tape. Work includes thorough overhaul, cleaning, oiling and adjustment.

Precision work guaranteed.

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We rent transits and levels on a monthly or yearly basis. Reasonable rates. All instruments are fully guaranteed in first class working order.

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317 W. Court St. • Milwaukee 12, Wis.

Additional Positions Vacant Advertising on page 90

We Need

POWER PLANT ENGINEERS

for Staff Positions

- RESIDENT ENGINEERS
- ELECTRICAL ENGINEERS
- STRUCTURAL ENGINEERS
- MECHANICAL ENGINEERS
- CONSTRUCTION SUPERINTENDENTS

If you are a Power Plant Engineer with considerable recent experience in design or construction of central station steam or hydro-electric plants, you may be qualified for a position on our staff.

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P-2041, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

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Process Equipment Layout
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Air Conditioning
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Boiler Houses
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Sprinklers
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Limited number of openings for Estimators experienced in Mechanical and Chemical installations as well as building construction.

Also have a number of openings in our Cincinnati and New York City offices for similar type personnel.

Excellent working conditions with paid vacations, sick leave plan and participating Group Insurance Program.

Please submit complete resume stating experience, education, salary required and date available to:

The H. K. FERGUSON COMPANY
Engineers and Builders
FERGUSON BUILDING **CLEVELAND 14, OHIO**

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We need men with experience as:

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Checkers

Men should have experience in Blast Furnaces, Steel Mill, Oil Refinery or other Heavy Structural Design.

Positions available in our offices at Cleveland, Ohio and Union, New Jersey.

We pay among highest rates plus annual profit-sharing bonus.

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ARTHUR G. McKEE & Co.
2300 Chester Ave., Cleveland 1, Ohio

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Large chemical company requires construction superintendents and engineers for regular full-time positions in central and eastern U. S. locations. Chemical plant experience beneficial. Full details of exp, age, salary expected, and when available for work must be given in first letter. Write Box ER-1523, 221 W. 41 St., N Y 18.

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P-1969, Engineering News Record
520 N. Michigan Ave., Chicago 11, Ill.

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JOHN MOHR & SONS
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Located: Mid-Southern city

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Unusual opportunity for good man to share in profits of growing concern in growing city.

P-2048, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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P-2067, Engineering News-Record
330 W. 42 St., New York 18, N. Y.

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Located: Mid-south city

Prefer structural or architectural engineer with aptitude for detail work to act as assistant to executive of moderate sized construction company. No previous construction experience necessary but preferred. Submit complete history, picture, sample of handwriting, references, etc.

P-2046, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

Don't forget the

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Buckeye Model 402 Cable Ditcher
Buckeye Model 51 Ditcher
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3 Caterpillar D 8s with Sidebooms
4 Caterpillar D 7s with Sidebooms
2 Allis-Chalmers HD 19s with Sidebooms
1 Allis-Chalmers HD 20 with Sideboom, Hydraulic Shifting and Counterweight

Other pipeline accessories also available for rent. For full details, contact

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Phone: (Chicago) EStebrook 8-5223
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SECTIONAL BOOM LENGTHS TO 130 FEET

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Marion 362 Shovel and Crane
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NW 80 Crane, Boom and Shovel
NW 6 Crane and Back Hoe
Insley Crane and Shovel K 12
Unit 514 Crane
NW 25 Back Hoe and Crane
PH 150 Back Hoe
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19615 Nottingham Road, Cleveland, Ohio
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Milwaukee 2, Wis.

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KIlpatrick 2-5300

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CHANNELS—PLATES
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½ to 2 Cu. Yd.—
Drag & Clamshell Buckets
Wrecking 1000 GI Trucks

◆

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ROckwell 9-2061

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WHitehall 3-1055

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Manitowocs, Models 2000-B, 3500, 4500 Draglines
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1¼ Yd Lorain Dragline
2 Yd Lorain, Models 82 & 820 Draglines
2 Yd Lima Model 802 Dragline
2 Yd Northwest Model 80-D Dragline & Shovel
2½ Yd Marion Model 93-M Shovel
2½ Yd Bucyrus Erie Model 43-B Shovel
2½ Yd P&H Model 925 LC Dragline
3½ Yd Lima Model 1201 Dragline Shovel
3½ Yd Monaghan, Dragline, Electric
4 Yd Bucyrus Erie Dragline, Electric
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15 Ton Northwest Truck Crane
10 Ton Krane Kar
Wiley Whirley, Steamer
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17 Diesel 315, 500, 630, 900 & 1500 Ft.
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11 Low Pres. 743, 1080, 2200, 3000 & 6040 Ft.

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9—25, 40, & 60 Ton Steam & Elec. Whirley Cranes.
2—41B Bucyrus 1-½ Yd. 60' Boom Steam Crane.
[illegible] Ton Orton Diesel Locomotive Crane.
[illegible] Bucyrus, 80D Northwest Diesel Shovels-Drags.

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33—Conway, Enco & Gardner Denver Tnl. Shls.
26—Battery & Trolley Locomotives, 4, 6, 8 & 10 T.
266—[illegible] 1, 2, 4, 6 & 8 Yd. Cap.

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164—Dump Cars 1½, 2, 3, 5, 16, 20 & 30 Yd. Cap.
96—10,000 Gal. Tank Cars—100 Box Cars.
128—40 & 50 Ton Flat Cars—68—50 Ton Gondolas.

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42—Gasoline 35, 25, 20, 16, 10 & 8 Ton.
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Vulcan 800 & Vulcan #2 & 1 & 5000.

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Model 160, 190 & 180 & 200 REX Pumpcretes.

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2—Terry 25 ton, 100' Boom Guy Steel Erectors.
3—7-10 Guy 85' & 50 Ton 100'.

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Used Approximately Ninety Days for 45,000 Square Yards Paving

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2—Model LS
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1—Bucyrus Erie—Lake Model, 18 yds

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Cutting — Threading — Flanging — Fittings — Valves.

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OPPORTUNITIES
can be found each week in the
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2 **C-11 Tournapulls** ≠B6T2406-C11-C; ≠B6T2407-C11C (have moved approx. 250,000 cu. yds. dirt each).. **$36,750.00**
4 **Super C. Tournapulls** ≠C3T5682C1H; ≠C3T5516C1H; ≠C3T5550C1H; ≠C3T-5667C1H (have moved approximately 125,000 cu. yds. dirt each)... **42,000.00**
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Caterpillar grader Model No. 11. ≠6K823 .... **3,150.00**
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D-6 Caterpillar tractor with hydraulic angle blade ≠9U1181 .... **7,875.00**

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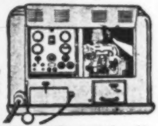
Brand New!
War Surplus
Signal Corps
Power Unit PE 197



115v 60 cy. A.C. single ph. 5 K.W. Hobart, water cooled, 14 h.p. 4 cyl. Hercules engine. **Remote Control**, complete panel board with instruments. 150 ft. auto remote control cable with reel; 150 ft. #6 hvy. duty wire with reel; housed in metal case with replacement parts & tools. Cable with reels alone worth $400. Reg. price of unit $1900. Shipping wt. 1250 lbs. Our price, complete **$895.00**
f.o.b. Chicago

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Save 8% to 10% on booms fabricated in our plant for any make crane.
Delivery — 1 to 3 weeks

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Link-Belt Combination Crane & Dragline

Serial #2609, powered by D-13,000 Caterpillar—65' Boom. New 1-½ Yd. Johnson General Purpose Clam Bucket & 1-¾ Yd. Omaha Standard Dragline Bucket.

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Chicago Pneumatic 14x12 compressor
Ingersoll Rand, 12x10 compressor

2—Ingersol Rand compressors, 354 cu.yd. direct driven air diesel.

FS-2066, Engineering News-Record
330 W. 42 St., New York 18, N. Y.

FOR SALE

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CAMILLO PROFENNO COMPANY
127 Marginal Way Portland 3, Maine

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50-TON CAPACITY INDUSTRIAL TYPE L

STEAM LOCO-CRANE

Serial No. 4400, 90' Main Boom, 20' Boom Extension Cast Steel Truck Frames — Good Operating Condition—*Price on Inquiry*.

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Marion, 362, 1½ yard crane 80' boom, Waukesha-Hesselman diesel engine, excellent condition—**$16,000.**

Marion, 362, 1½ yard crane, 80' boom, D-13000 Caterpillar motor, excellent condition—**$16,000.**

Bucyrus Erie, 43-B, 1¾ yard crane, 60' boom, Wisconsin gasoline motor, excellent condition—**$15,500.**

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The above equipment may be inspected at our yard, and is quoted F.O.B. our yard, subject to prior sale.

KOCH
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Kilpatrick 2-3800

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Link-Belt, ½ yd. Model LS-60, equipped with crane and backhoe.
Parsons Trencher, Model 25.
Caterpillar D8 Tractor with bulldozer.
Allis-Chalmers HD-14 Tractor with bulldozer.
Allis-Chalmers HD-19 Tractor with bulldozer.

All of this equipment is now operating and will be available in about two weeks, and can be inspected in the vicinity of Dover, Delaware.

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M-209 Delaware Trust Bldg.
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For Caterpillar D8-D7-D6-D2 and International TD18-TD14
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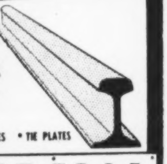

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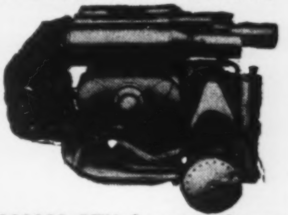

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COMMENT from the BUTLER ENGINEER

October, 1951

Old Soldiers Don't Even Fade Away

The Story of a 6-star General: He was born in Wisconsin just before World War II at the Butler Bin plant. I was the obstetrical-engineer and I never saw a healthier youngster. Ready for military service at birth, he was trained—(or air-entrained) —pouring concrete for the Hoosier Ordnance Plant (shells). Later he was promoted (shells *and* powder) to pouring concrete for the Lone Star Ordnance Plant. The Navy wanted his great production talent—so, (no nonsense about inter-service competition) he poured the Navy Base in Utah.

SIX STAR GENERAL

Now a brilliant leader, he won his 4th star in a top secret job — ready mixed concrete for the immense A-bomb Plant in Washington.

His 5th followed: concrete for the rocket-powder Government Ordnance Plant in Arkansas.

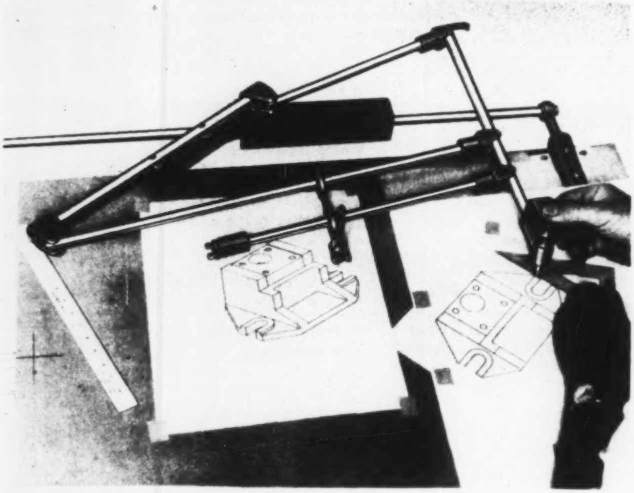
Then came peace and civilian life. Perhaps for sentimental reasons he accepted a key position pouring for a large dam in Wisconsin—his birth state. As the last yard was poured, he was asked to reenter military service. . . . His delight was unbounded when he found he was to ready-mix for the *H-Bomb Plant* — and with it now has come his 6th star of command. As you see, he just *won't* fade away! If I weren't a conservative engineer I'd say that the progeny of Butler Bin had an actual *genius* for production and the durability of Gibraltar.

See you in December.

The Butler Engineer

BUTLER BIN COMPANY
WAUKESHA, WISCONSIN

NEW PRODUCTS



Simple isometric and dimetric drafting machine

In the illustration above, the drawing shown taped to the right of the board is the original from which an isometric view is being made. The operator is following its lines with a tracer point on the VIBAX linkage. Simultaneously the pencil on the left is drawing the correct isometric view. For circles a radius arm with center point is used to guard the tracer. It's a full-size drawing in all details, with ellipses correctly proportioned. It has been balanced so that the operator is almost unaware of any part but the tracer point. Great speed results, too, since no angles must be measured and no proportions figured out. An adjustable screen carrying the drawing paper is moved successively to each level on the elevation drawing and the lines pertaining to each level are simply followed with a traver point. The machine will handle pencils, ball-point pens or any standard drafting pen.

Dimetric projections offer distinct advantages over isometric in many cases but they are seldom used because of the difficult drafting problem involved. With the VIBAX, the pencil is merely placed in a different holder and the height scale made with dimetric rather than isometric rule. For a true dimetric view (in which one side appears lengthened by a ratio of 2:1) the original drawing must be taped to the board at an angle of 20.5 degrees instead of the 45-degree required for isometric views. INDAMER CORPORATION, 11 WEST 42ND STREET, NEW YORK 18, NEW YORK.

Two new light plants

Rated at 1200 and 2200 watts respectively, two new 4.25-hp water-cooled light plants have been introduced to replace two smaller types previously available. The new "True Marine" models are the M1240-MS and the M2140-MS and have mechanical fuel pump, electric starter switch, battery cutout, marine type water pump, carburetor, flame arrester, drip collector, and automatic thermostatic temperature control of cooling water. They are available for both AC and DC use. UNIVERSAL MOTOR COMPANY, OSHKOSH, WISCONSIN.

(Continued on page 100)

Are *you* turning in all your SCRAP?

Don't wait for "George" to do it

IF you are a steel user, this important job of getting more scrap back to the mills is directly up to *you*. You just cannot afford to sit idly by while the scrap shortage gets worse. For unless everyone really pitches into this job of digging out all the scrap possible, steel production is bound to suffer, and every steel user, in more or less degree, will suffer too.

More scrap means *more* steel—it's as simple as that.

Right now some mills have only a bare two-days' supply of scrap on hand. Others have even less. Some steel-making furnaces already have had to shut down for lack of scrap. The situation is serious. Only you can help improve it.

By turning in every piece of worn-out equipment, every obsolete tool and machine, in fact every pound of iron and steel scrap you can comb out of your plant, you'll be helping relieve the worst scrap shortage since Pearl Harbor days . . . and the steel industry will be able to produce more of the steel you need.

Remember—it takes at least one-half ton of scrap to make one ton of steel. To maintain steel's present high production schedules requires more than 1400 carloads of industrial scrap *every* day. So turn in your scrap—ALL your scrap—and keep the mills rolling. This is more than a shortage. It's an emergency that vitally concerns you—and us—and the Nation.

All the SCRAP you can scrape up is needed - and needed NOW!

You'll find your local scrap dealers listed in the yellow pages of the phone directory.

This page would ordinarily be used to tell you about

AMERICAN WELDED WIRE FABRIC

but, because without SCRAP we cannot produce steel, we are asking instead for your all-out help in getting more SCRAP to the mills.

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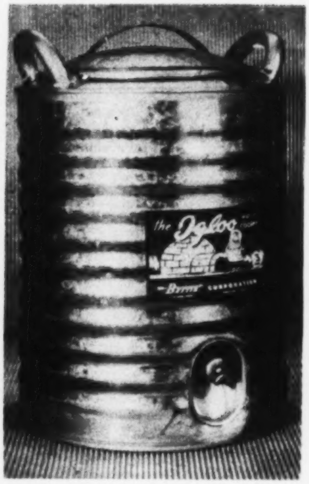

Water cooler

A handy item to have in sufficient number on the job is an insulated container for keeping water cool or coffee hot, depending on the weather. Such a container is the Igloo, made in 1½, 3, 5, and 10-gallon sizes. Galvanized sides are corrugated and its double-folded seams will take quite a banging around. Made with or without a pushbutton, which is inset flush with the side to prevent being broken off, the can features two extra heavy handles which protect the removable top cover. Fully insulated, it has kept liquids cold or hot, as desired, all day on tests. BETTIS CORPORATION, 320 SOUTH 66TH STREET, HOUSTON 11, TEXAS.

Competition for tools

A series of competitive demonstrations for powder actuated fastening tools was held recently at the site of an industrial building project in Dayton, Ohio. Result: two records set. According to the RAMSET Company, one of their fasteners seated 200 ¼-in. dia. fasteners in 61 min. to anchor 2 x 4 sleepers to concrete. This was against 93 minutes for competing tools and fasteners. In another test, other RAMSETS fasteners which had been seated in a concrete ceiling resisted a direct pull of 1600 lb., which pulled loose others. As a result, the proven products and tools will be used on the project to anchor sleepers, plumbing lines and electrical conduits. RAMSET FASTENERS INC., 12117 BEREA ROAD, CLEVELAND 11, OHIO.

(Continued on page 102)

GULF PRODUCTS *and* FINE SERVICE

keep equipment rolling

on Delaware Water Supply Project

Frazier-Davis Construction Co. of St. Louis, Mo., is making rapid progress on the Neversink Tunnel, an important part of the Delaware Water Supply Project for the City of New York. This tunnel, which connects the Neversink and Rondout Reservoirs, is 5.2 miles in length and will have a finished diameter of 10 feet, except at the portal end where it will be 8 feet.

FRAZIER-DAVIS Construction Co. is one of a number of prominent Midwestern contractors who finds that it pays to use Gulf quality lubricants and fuels.

There are three solid reasons why so many leading contractors prefer the products identified by the familiar orange disc. One is performance—the kind of lubricant and fuel efficiency that means smooth, dependable operation and low maintenance costs. Another is the expert engineering service Gulf provides. Third, Gulf's prompt delivery service.

Write, wire or phone your nearest Gulf office and arrange to use Gulf quality lubricants and fuels on your next job. Gulf products and that good Gulf service are quickly available to you through more than 1200 warehouses located in 33 states from Maine to New Mexico. Gulf Oil Corporation · Gulf Refining Company, Gulf Building, Pittsburgh, Pennsylvania.

FIFTY YEARS OF SERVICE
1901 GULF 1951
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ATLAS SPEED SYSTEM OF STEEL FORM CONSTRUCTION

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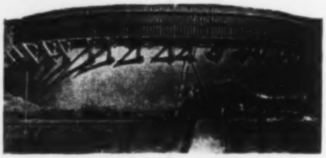
STEEL FORMS—Good for reuse again and again on job after job indefinitely without repair. Cut material costs way below wood.—Many records of 400-500 and more uses.

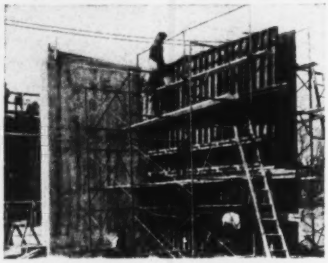
SPEED Steel Forms—Can be set up, stripped, cleaned and moved in way less time . . . No heavy bracing needed.

Atlas Speed Steel Forms go together with wedge clips . . . NO special fastenings or wrenches needed. NO studs on walls—Fewer posts and girts.

Let's talk it over. Just send us prints of the job. Glad to give you Layouts, Costs Studies and complete facts to fit your individual conditions. Supervision by specialists available at no extra cost to you.



The same forms can be used for walls, slabs, circular tanks, sewers, tunnels, manholes, etc.



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Got some good figures on the TURNPIKE.
See page 8 and 9
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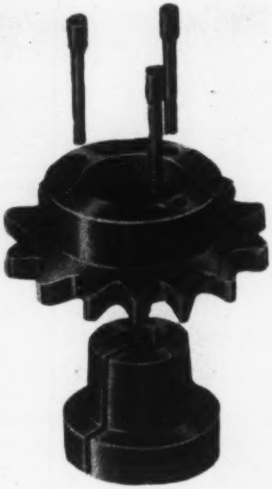

Sheave and sprocket hubs replaceable

Here's one manufacturer who saw the need for an interchangeable hub on his "QD" V-belt sheaves and roller chain sprockets—and at the same time lowered his customers costs for replacement of broken or worn sprockets and precluded purchase of lots of "spares". Now his distributors can give off-the-shelf service without reboring.

The QD's are taper-bored to receive a tapered hub. The bolts seen in the picture pull the sprocket on to the tapered split hub for a tapered drive assembly and positive press fit on the shaft. Tapped holes in the sprocket permit pull-up bolts to be used as jack screws to break this tapered fit for dismounting and/or removal. Changes are simplified, maintenance time reduced, and costs lowered. Sprockets are stocked in ½-in. pitch through 1¾-in. pitch. FORT WORTH STEEL AND MACHINERY COMPANY, FORT WORTH, TEXAS.

Improved steam-detergent cleaning

Steam-jet cleaning has been found to be effective at pressures from 125 to 145 psi, but according to this manufacturer's field and laboratory tests faster cleaning can be obtained by stepping up jet velocity without adding appreciably to the electric power requirements. The new SPEEDYJET

(*Continud on page* 104)

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This truck mixer rating plate is what enables architects, engineers and contractors to confidently buy more than $300,000,000 worth of ready-mixed concrete a year.

It guarantees at a glance the proper drum design and speed, accuracy of water control *and full amount of free mixing space* needed to properly mix or agitate a rated batch.

Always look for this rating plate in order to avoid questionable concrete from non-standard truck mixers.

Truck Mixer Manufacturers Bureau

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THE T. L. SMITH COMPANY
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WORTHINGTON PUMP & MACHINERY CORP.
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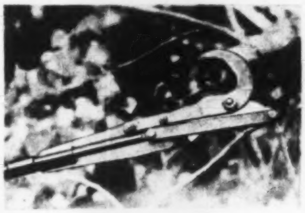
Ole K. Olsen Co., 823 Perdido St., New Orleans, La.
Philip D. Barnard, 2036 Addison, Houston 5, Tex.
Western Steel Prod. Co., 1755 W. 13th Ave., Denver 4, Colo.

Steam Jet Cleaner, Model JC-25, and the equally new twin-jet Steam Lance combine to give super-jet velocity and powerful cleaning action, he says. Mounting a water tank big enough to provide 3 to 4 hr. of continuous operation, the 16 x 48-in unit is readily portable. Current shuts off automatically when water is all boiled off. Available for 220, 440 or 550 volts, it's rated at 20kw and consumes only 15 kw-per-hr under ordinary operating conditions. LIVINGSTONE ENGINEERING COMPANY, WORCESTER, MASSACHUSETTS.

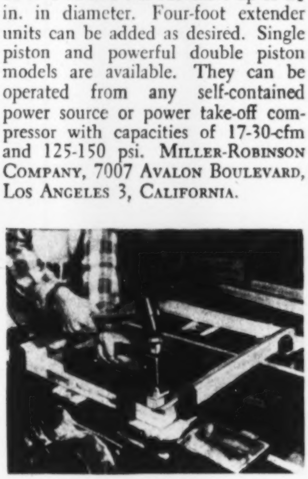
Single-lever control for mixer is foolproof

Many mixers on the market have single-lever control. On one type you move it in one direction to engage a clutch, then through a dead central position to the other side for brake contact. On others you move on past the clutch position to engage the brake at the extreme end of travel. In all cases there must be a very fine adjustment between the brake and clutch to prevent slipping a loaded skip, snapping of cables, etc. On this new Rex 6S mixer *the brake is always engaged*, and the lever can be moved only in one direction to engage the clutch. Should the operator's hand slip, the lever returns automatically to brake position. The raising skip, when it strikes a stop, automatically knocks out the clutch, returning the lever to brake position also. At no time does it pass through a dead, neutral spot. Chain Belt Company of Milwaukee, 1600 West Bruce Street, Milwaukee 4, Wisconsin.



Air-powered insulated line-clearing tools

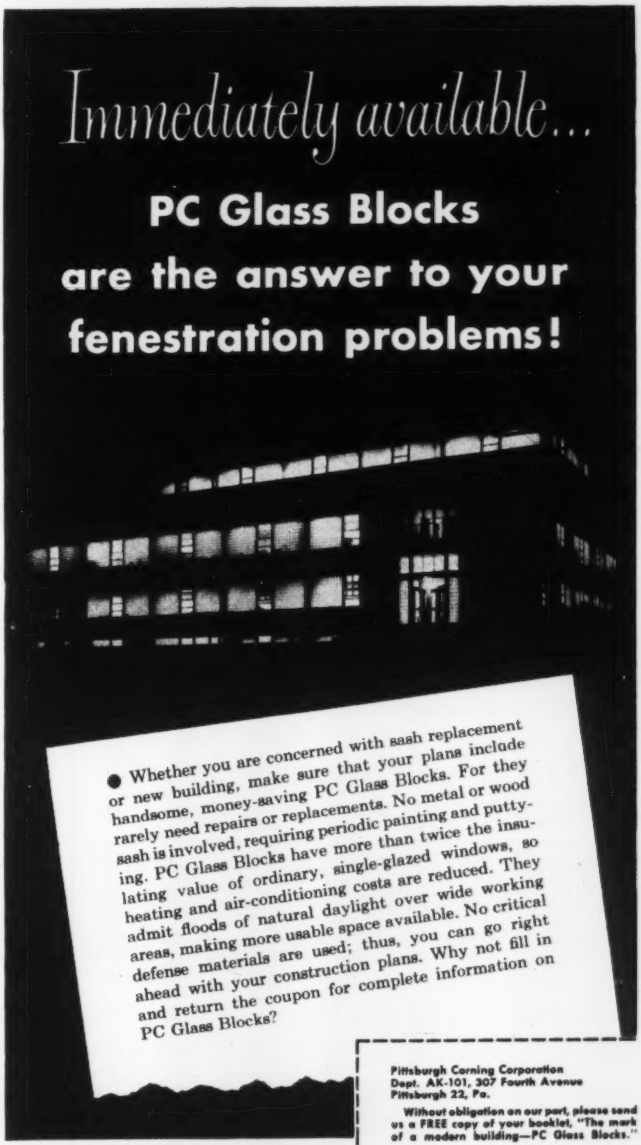
Known as "Limb-Loppers" these meet the needs of contractors, utility and power companies whose line clearing crews run the risk of shock, injury or death while clearing power lines of limbs, foliage and other entanglements. The standard lopper is 6 ft 8 in. long, weighs 9 lb 8 oz and has a cutting capacity of 1¼ to 1¾ in. The heavy duty model is 7 ft 2 in., weighs 11 lb 6 oz and can cut limbs up to 2¼ in. in diameter. Four-foot extender units can be added as desired. Single piston and powerful double piston models are available. They can be operated from any self-contained power source or power take-off compressor with capacities of 17-30-cfm and 125-150 psi. Miller-Robinson Company, 7007 Avalon Boulevard, Los Angeles 3, California.



Sash pin driver

For generations past the familiar, round 12-gauge sashpin has been the fastening device on sash mortise and tenon joints. But not until 1951, to our knowledge, has anyone come up with a mechanical means of guiding and driving them. This Model AK-12 Spotpinner is built primarily for production line use, and contains two fully loaded magazines of pins within its lightweight frame. Galvanized

(*Continued on page 109*)



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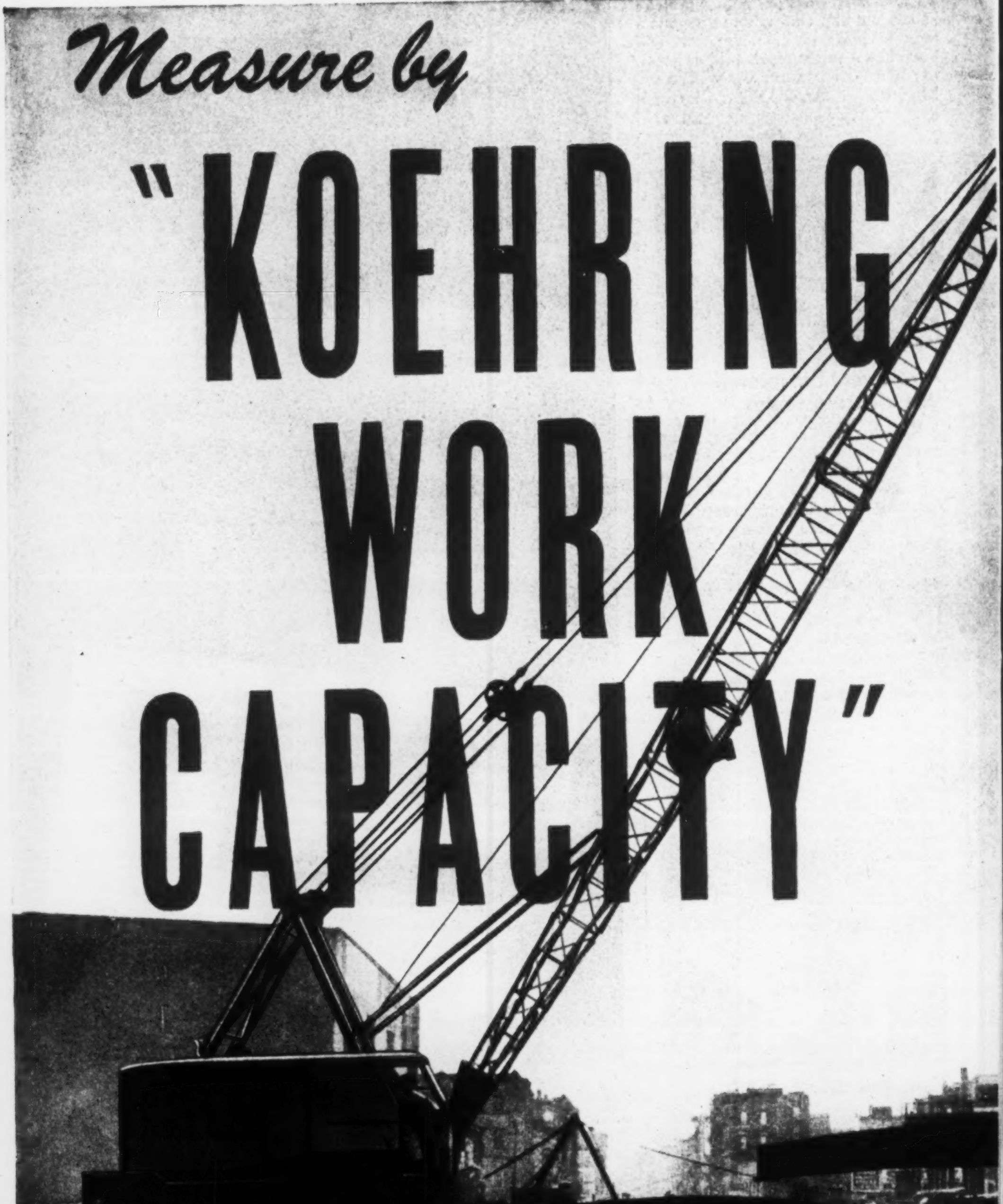
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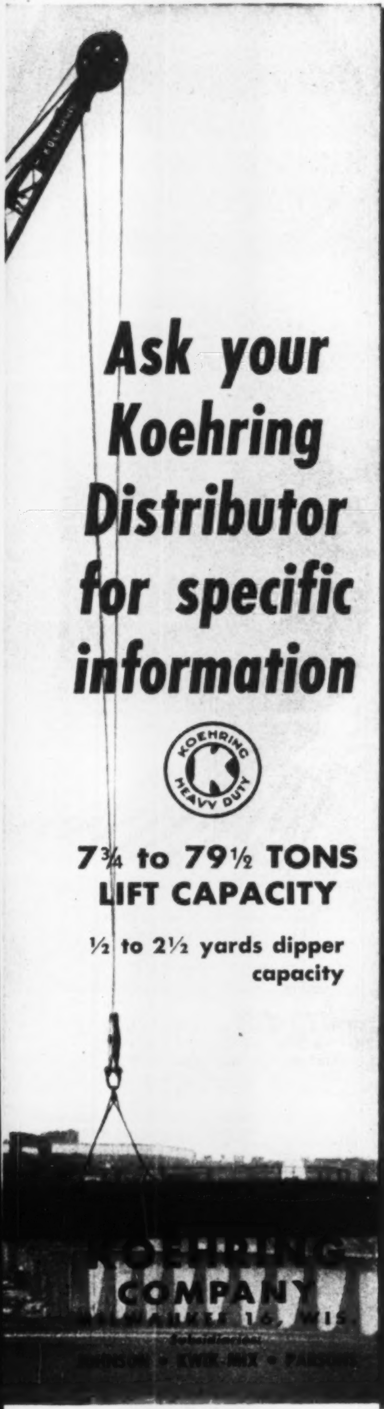

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With 30 digging feeds, 3 bucket line and conveyor belt speeds all fully reversible, plus 3 travel speeds, this Parsons 250 Trenchliner is extremely flexible . . . digs 16 to 42″ wide, up to 12′-6″ deep . . . cuts within 11″ of either side. Power-shift, arc-type conveyor dumps right or left. Get complete facts on this general-purpose 250 Trenchliner, or 4 other heavy-duty sizes, from your Parsons distributor, or write us today.

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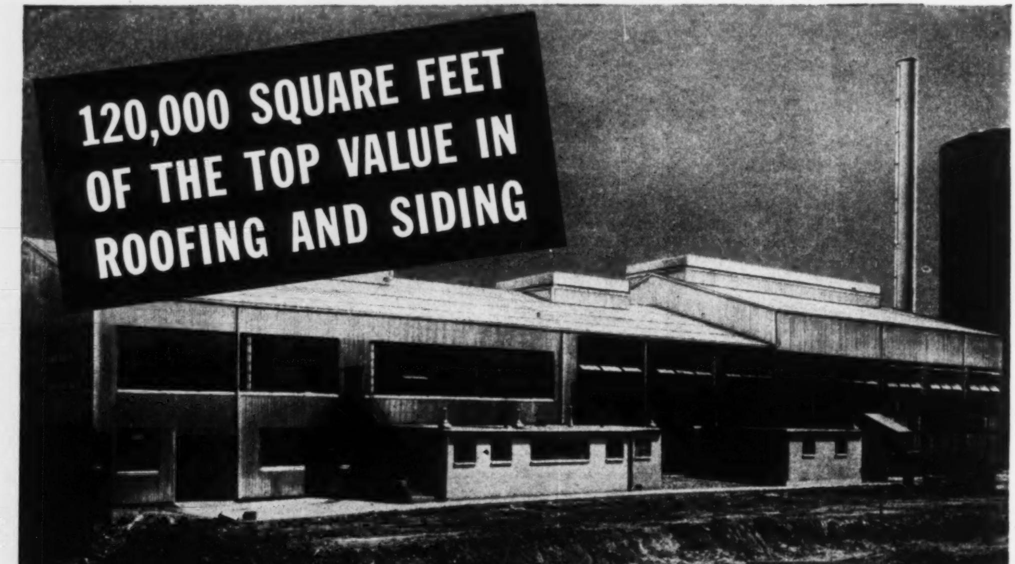

Applicator:
M. W. Nabakowski,
vice-president of the
A. Nabakowski Co.

The Thatcher Glass Company plant at Lawrenceburg, Indiana, called for 120,000 sq. ft. of roofing and siding. The owners and their architects, Herman and Associates, Cincinnati, liked the idea of aluminum. They knew its lighter weight (56 lbs. per square) would save on framing. They knew this rustproof, corrosion-resistant metal would need no painting—practically eliminate maintenance. And aluminum's heat reflectivity would make the buildings cooler in summer, warmer in winter.

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Offices in principal cities. Check your classified phone book for our listing under "Building Materials," or write: Reynolds Metals Company, Building Products Division, 2005 South Ninth Street, Louisville 1, Ky.

Specifications for Reynolds *Lifetime* Aluminum Industrial Corrugated:

Thickness .032"
Corrugations 7/8" deep, 2-2/3" crown to crown
Uniform load support (roof) 80 p.s.f. on 4' purlin spacing
Uniform wind load capacity (siding) 20 p.s.f. on girt spacings up to 7'9"
Roofing width 35", coverage 32"
Siding width 33-3/4", coverage 32"
Lengths 5', 6', 7', 8', 9', 10', 11', 12'

Aluminum is required for planes and other military needs. Reynolds *Lifetime* Aluminum Industrial Corrugated is still produced, but the total supply is necessarily reduced. Rated orders receive priority handling.

REYNOLDS *Lifetime* ALUMINUM INDUSTRIAL CORRUGATED

New Products . . .

Spotpins have chisel points to avoid splitting check rails or thin muntins, and their rounded sides are knurled for gripping power. The AK-12 drives all three sizes of pins, ⅞, 1 and 1⅛-in. The pins are cohered in sticks for easy magazine loading, much like staples in a stapling machine. SPOTNAILS INC., 1218 SHERMAN AVENUE, EVANSTON, ILLINOIS.

Two new portable gravel plants

Made by Pioneer, are new to the crushing industry. Both have bottom deck feed and permit balanced crusher loads through adjustment of jaw crusher settings. These jaw crushers—and travel weight—are the only items in which the new models are not identical. The 25V has a 10x36 jaw; the 24V a 10x24. Travel weights (without power units) are 46,000 lb and 42,100 lb, respectively. Each has a swivel-type field conveyor, 24-in. mechanical feeder; 24-in. x 25-ft channel frame conveyor, over-all length of 40 ft, travel height of only 12 ft 6 in. and 21-ft wheelbase.

The plants are pneumatic-tire mounted on twelve 10.00x20 tires, 3 axle, with equalizer between the two rear axles. PIONEER ENGINEERING WORKS, INC., 1515 CENTRAL AVENUE, MINNEAPOLIS 13, MINNESOTA

Rubber added to flooring

consisting of plastic asphalt-rock limestone and cold asphalt emulsion is said to give floors a live feeling which lessens tendency to rut or wave under heavy point loads and reduces brittleness in sub-freezing weather. Marketed under the trade name IMMEDIATE-SET, the material is factory-mixed and requires no additives or processing before use. It's particularly suitable for large area floor resurfacing with a thin (½-in.) layer. Also fine for patching small damaged areas. It's shipped premixed in 100-lb. moisture-proof fabric bags or in aggregate form with supplementary pails of asphalt emulsion for on-location storage and mixing when needed. FLASH-STONE COMPANY INC., 30 E. RITTENHOUSE STREET, PHILADELPHIA 44, PENNSYLVANIA.

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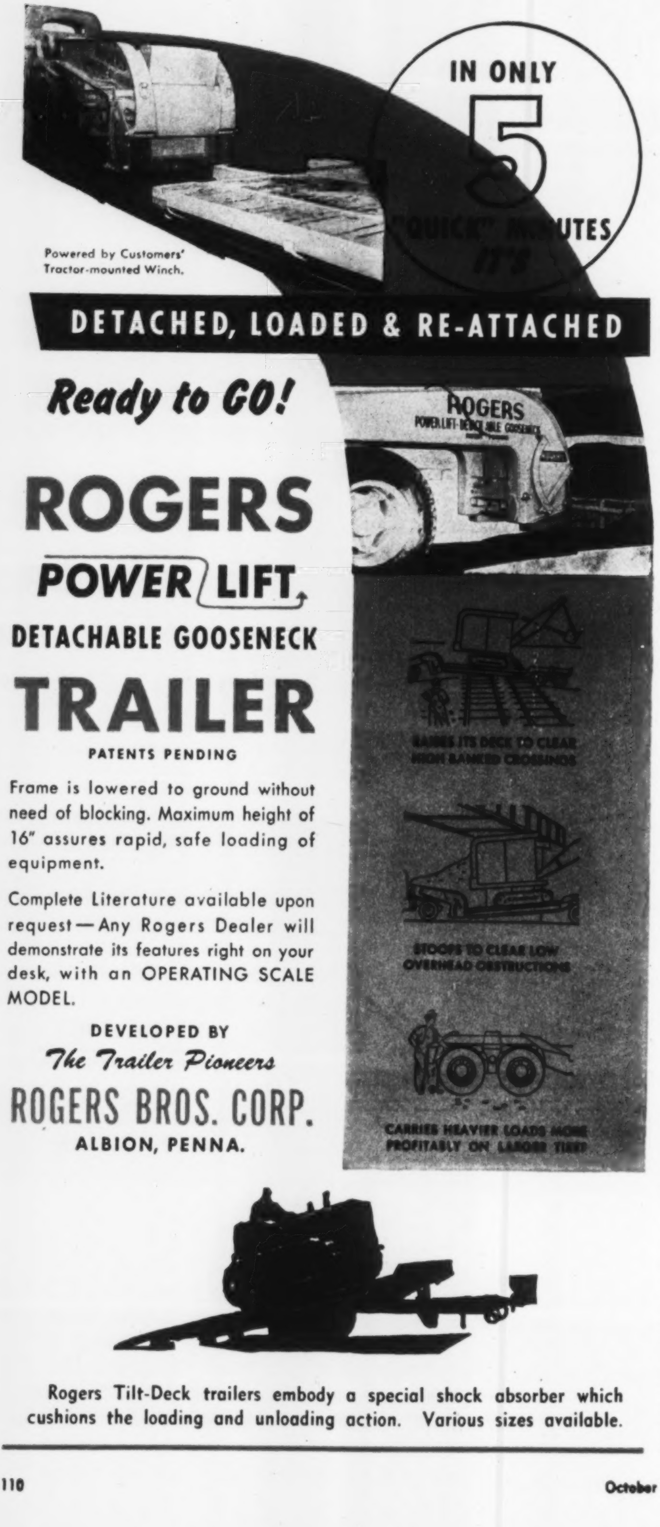

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STOOPS TO CLEAR LOW OVERHEAD OBSTRUCTIONS
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Rogers Tilt-Deck trailers embody a special shock absorber which cushions the loading and unloading action. Various sizes available.

MANUFACTURERS' PUBLICATIONS

Soil testing services—Now in the process of preparation is a new and complete Soiltest catalog covering a complete line of soil testing apparatus. This will replace a brochure and follow-up bulletin now available which include: humidity cabinets, triaxial accessories, samplers, pumps, meters, permeameters etc. SOIL TESTING SERVICES INC., 4520 W. NORTH AVENUE, CHICAGO 39, ILLINOIS.

Manitowoc No. 2000—A new catalog on this 25-ton crane and 1¼-yd shovel has just been released and contains 12 pages packed with information and pictures. Some of these show operation of the plunger drum clutch, others the quick replacement of swing clutch linings, still others the new shovel crown chain arrangement and swivel type dragline fairlead. Individual diagrams show working ranges for crane, hoe, and standard or high-lift shovel front end attachments. Crane capacity chart covers the full lifting range from 25 tons at 12-ft radius to 100-ft boom at 70-ft radius. Catalog 20-51. MANITOWOC ENGINEERING WORKS, MANITOWOC, WISCONSIN.

Vacu-Blaster—Originally developed for cleaning rust surfaces from ships, this entirely different tool can blast-clean metal, concrete, brick, stone or wood surfaces. Essentially it's a blast cleaner with a vacuum pick-up, and it can be used in the same room where painting is being done, if necessary. Welding applications, unusual blast-cleaning applications, vacuum-pump dust collectors and accessories are all described. VACU-BLAST COMPANY INC., 350 PENINSULAR AVENUE, SAN MATEO, CALIFORNIA.

Plastic rock flooring—A new 8-page two-color brochure contains a combination of information on how and where to apply plastic rock flooring as well as technical data about the product itself. Typical flooring applications are illustrated, in particular the resurfacing of heavy traffic areas subjected to both foot and wheel movements. UNITED LABORATORIES INC., CLEVELAND 12, OHIO.

Piping insulation—A 24-pager listing advantages of FOAMGLAS. Lists its properties; typical data for cold, intermediate and hot applications; details for insulating tanks, ducts, removable covers, tank heads; prominent users. Entitled "FOAMGLAS Insulation for Piping and Process Equipment", it contains tables showing sizes and shapes available in pipe insulation, standard blocks, beveled lags and standard curved segments. PITTSBURGH CORNING CORPORATION, 307 FOURTH AVENUE, PITTSBURGH 22, PENNSYLVANIA.

Arctangent coordinate graph paper—Free samples are available of this new coordinate graph paper as well as a bulletin describing its use for curve plotting in scientific, mathematical, engineering and statistical analysis. The use of these arctangent coordinates permits the plotting of uninterrupted curves of data having values ranging from plus infinity to minus infinity and including zero as well. Extrapolation to zero and infinity and interpolation are easily accomplished, according to the attached release. ORBIT ELECTRIC COMPANY, 2710 NORTH MENARD AVENUE, CHICAGO 39, ILLINOIS.

Vibrating screens—Here is a compact 20-page booklet on Model "UP" vibrating screens for fast, accurate dry-screening of light and fine materials and Model "NRM" liquid vibrating screens for high-speed separation of solids from liquids. Both types of screen are available in a wide range of sizes. The "UP" can be supplied with single or multiple decks, and with semi- or totally-enclosed housings. Descriptive material includes specific information on how to select the right screen and screen cloth for maximum operating efficiency; dimension tables, weights, horsepower requirements and other data of value to engineers and plant operators. New book is No. 2377. LINK-BELT COMPANY, 307 NORTH MICHIGAN AVENUE, CHICAGO 1, ILLINOIS.

Elevating tower—A new descriptive folder is now available announcing a new light-weight, material-handling tower. Of 3,000 lb. capacity, it is of panel type and made of lightweight tubular steel, ideally suited for erection in confined places, it contains only 11 component parts. It is built out of prefabricated panels with integral notch-locking mechanisms, requiring no bolts or nuts for braces and girts. AMERICAN TUBULAR ELEVATOR COMPANY, ZELIENOPLE, PENNSYLVANIA.

Vertical sump pumps — Four basic units are made in a range of sizes from 1- to 10-inch discharge with capacities from 10 to 3,000 gpm and heads up to 140 feet. They are described in a handy, 8-pager, along with details, construction illustrations selection tables and other data. THE DEMING COMPANY, SALEM, OHIO.

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Ohio cracks down on stream pollution

Genial Attorney General C. William O'Neill is making Ohio's antipollution laws work. Within a pattern of legal moves to obtain compliance, he is talking softly to municipal officials and getting their cooperation. As a result millions of dollars in new sewage systems and treatment plants are being planned, some are in progress. (ENR Sept. 27, p. 24)

The legal moves he has taken—orders issued against municipalities cited by the State Health Department to begin sewage disposal plans or face court action—have been taken under the 1949 pollution law. This law carries a maximum penalty of a $500 fine for each 30-day violation. But there is more behind his moves than that.

A much more severe law became effective last week, and will become operative next Sept. 27, to bring about compliance with terms of the eight-state Ohio River Valley Sanitation Compact.

• **Strong currents**—Feeling the 1949 law was too weak, the forces of clean streams went to work early this year for new legislation.

Drawing heavily on competent legal and engineering talent, they prepared a new bill under the leadership of Senator William H. Deddens of Cincinnati. This bill was introduced in the state Senate. It passed that chamber by majority vote and was sent to the House of Representatives.

But in the House an opposition contrived to bottle up this bill in committee and tried to let it die there.

That's what happened. And a storm of protest blew up that was not counted on. From Toledo to Marietta, from Cleveland to Cincinnati and from Youngstown to Dayton, there arose an angry public stopped in its wishes.

• **The editors fought**—Newspapers splashed banner headlines across their front pages telling the story. Editorials—incensed and pointed—named names and called for heads to roll in the next election. MacArthur and Korea took a backseat for a change. Irate citizens wrote irate letters to editors; civic organizations moved into the fray; and the legislators began to feel the impact of an aroused citizenry. As citizen pressure boiled higher and higher, legislators began to look for storm cellars.

But the possibility of taking remedial action seemed slim. The legislature had only one last day to meet—and that just to close up shop for the season.

Even so agents of compromise in the House were at work night-and-day forging out changes in the law. These changes were accepted by the proponents of clean streams in order to get a better law on the books even though the compromise was not as strong as they thought it needed to be.

This revised law was introduced into both the Senate and House—on the last day of the session when no business is normally transacted. And it cleared both houses by powerful majorities in one day.

• **Last minute victory**—Such is the power of public opinion when incited and marshalled effectively. A million-to-one shot, the 1951 antipollution law for Ohio came through on the last day of the session. The governor signed it shortly thereafter, and the law has now become effective.

In the meantime the old pollution-abatement law is being given a trial. The state men are anxious to learn just how deficient it is. And they want to keep driving forward in their effort to get all cities and industries to treat their wastes before discharge until the new act takes hold.

The new law, which becomes effective this fall:

(1) Sets up a water control board made up of the directors of health, natural resources and commerce and two members appointed by the governor;

(2) Gives the board power to issue, modify or invoke orders, after public hearing, in regard to pollution abatement; to issue, revoke or deny, after public hearing, permits to discharge polluting substances into public waters; and to institute action in Common Pleas Court to compel compliance with orders of the board.

(3) Makes it unlawful, one year from the effective date of the act, to pollute public waters, except under a permit issued by the board or where the waste is first dumped into a state or municipal sewage system.

(4) Exempts acid mine or industrial wastes for which there is no practical method of treatment, gravel washings on an operator's property and discharges of hydrated lime and wastes of farm animals.

(5) Makes polluting of public waters a misdemeanor and a public nuisance, punishable by a fine of up to $500 and one year in prison. After conviction, and time for compliance, a new offense would occur each day of continued violation.

• **Crime and punishment**—Polluting of public waters would also be subject to injunction. The board would act through the State's attorney general in seeking enforcement of its orders.

Ohio's big fight for an effective pollution-abatement act has been rolled into history. It demonstrated —most conclusively—that the people of that state want clean streams. Their action should have made clear to the state officials that they —the officials—have a mandate to carry out.

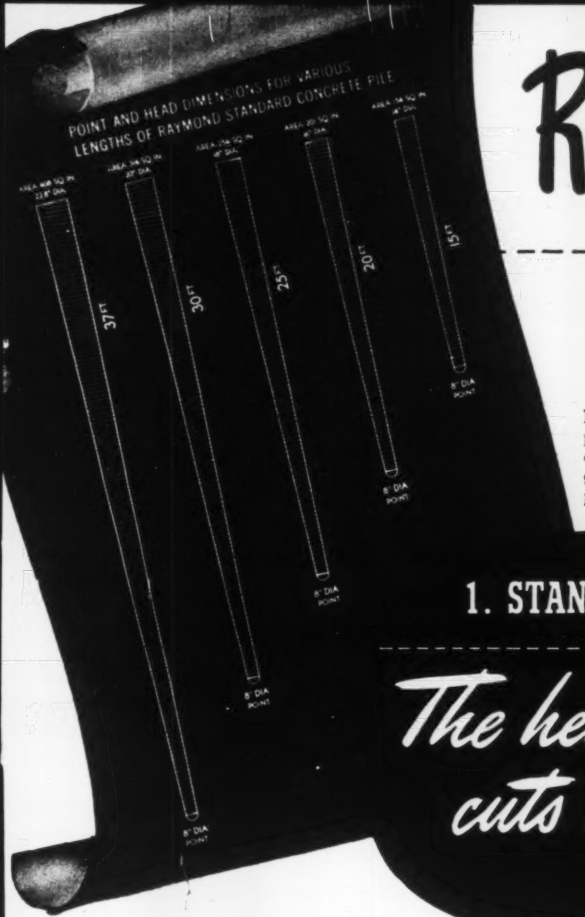
It's a big mandate too and one that the people themselves—in the last analysis—must discharge.

The pinch will come—as it always does—when the question of spending money comes up. These same people who clamored so loudly for a good pollution law are going to have to bear the cost of treatment facilities needed to keep the streams clean.

The state through its pollution-abatement board can crack down on the cities and industries. But why should this have to be done? The people expressed their preference for sewage and industrial waste treatment. Now will they turn around and stand in the way of its accomplishment?

• **Clean up**—Already Ohio appears on the verge of beating the health menace of streams polluted by raw sewage. And cleanup of pollution from industrial wastes has been started.

With Attorney General O'Neill backing up State Health Director John D. Porterfield, the heat is on. Dr. Porterfield will be first chairman of the abatement board. Natural Resources Director A. W. Marion and Commerce Director W. H. Annat will be ex-officio members.



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3. PIPE STEP-TAPER
4. COMPOSITE
5. GOW CAISSONS

Raymond installs every type of pile: cast-in-place concrete, precast concrete, steel pipe, wood and H-beam. Raymond operations include underpinning, borings and soil investigations, waterfront construction and harbor and river improvements, and cement mortar lining of oil and water pipe lines 4" to 144" in diameter by the Centriline Corporation, a Raymond subsidiary.

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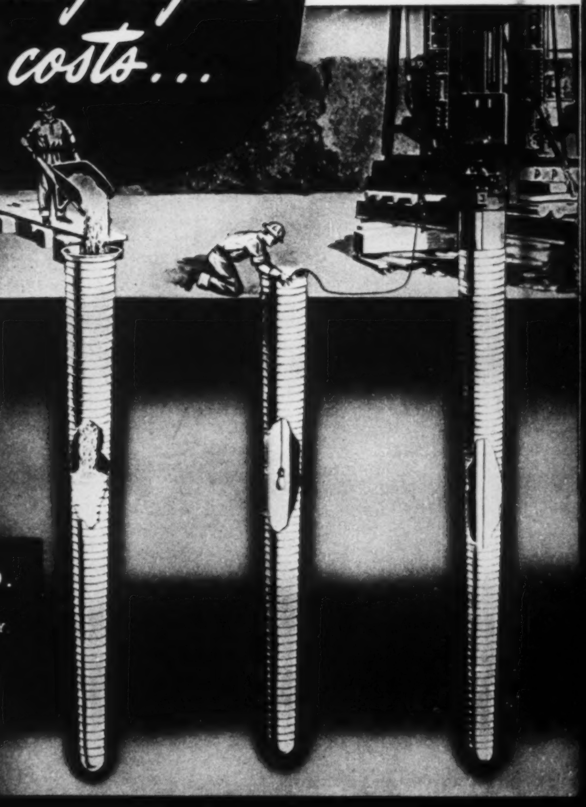
The heavy taper cuts costs...

Note that the permanent steel shell maintains the soil pressure developed during driving and while the concrete is setting, thus insuring a perfect pile free from distortion with a high load capacity.



Raymond Standard Concrete Piles have a heavy, uniformly tapered permanent steel shell. On friction piles, this taper acts like a wedge, giving these specific advantages:

1. Driving resistance is maintained.
2. The load is transmitted to the soil through the entire length of the pile.
3. The load can be carried by shorter piles, because of their greater carrying capacity.
4. Since shorter piles cost less to drive, the taper usually results in substantial savings.

Each of these statements has been tested and proved innumerable times. The evidence is at your disposal at any of our offices. Your inquiry is cordially invited.

Raymond CONCRETE PILE CO.

140 CEDAR ST., NEW YORK 6, N. Y.

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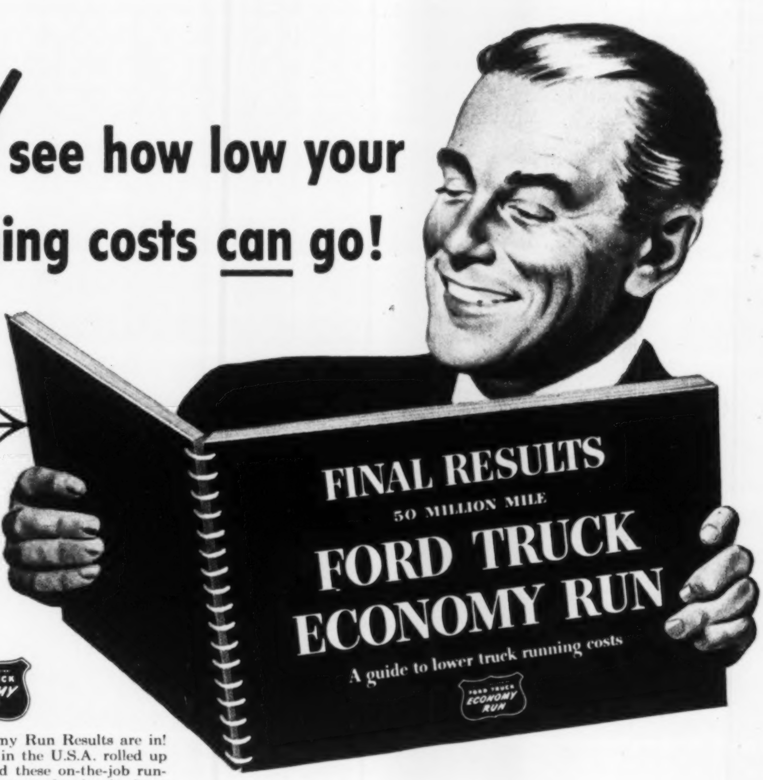

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RUN

Final Ford Truck Economy Run Results are in! Owners from every state in the U.S.A. rolled up 53,783,930 miles—recorded these on-the-job running costs. Every important truck-using business was represented in the 6-month Run, every size Ford Truck, every kind of road and load condition.

"I truck 8 tons of sand for less than 4½¢ a mile!"

—says Adolph Ulmer, Jr.,
Ulmer Sand & Gravel Co.,
Beaver Dam, Wisconsin

Mr. Ulmer was one of over 250 heavy construction operators who entered the nationwide Ford Economy Run. His POWER PILOT equipped Ford F-7 Dump Truck traveled 18,956 miles at a cost of only $825.30 for gas, oil, maintenance and repairs!

You'll find his complete running cost record on page 62 in the "Final Results" book. See how *your* truck running costs stack up with other heavy construction men from all parts of the country—men whose loads and working conditions are similar to yours. See evidence of Ford Truck Economy!

See "Ford Festival" starring James Melton on NBC-TV.

New "Final Results" book gives black-and-white evidence of how *little* it can cost to run a Ford Truck in *your* kind of work!

Now check your truck costs against "par"! The "Final Results" book is a practical "yardstick" that lets you compare your running costs with the actual experience of other truck users in your kind of job.

See these cost-to-run figures today! There's no obligation. Your Ford Dealer will be glad to show you over 5,500 reports . . . arranged so that you can easily find cases with loads and working conditions similar to yours. See actual running costs for gasoline, oil, maintenance and repairs, paid for by actual truck operators, on actual jobs!

It may save you real money! See how important it is to have the truck *exactly* right for your job. Before you buy any truck, see written evidence of how little Ford Trucks cost to run in *your* type of business . . . in *any* type of business!

FORD TRUCKING COSTS LESS

. . . because Ford Trucks last longer! Using latest registration data on 7,318,000 trucks, life insurance experts prove Ford Trucks last longer!